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OUR COUNTRY AND COLONIAL SUBSCRIBERS are requested to furnish the Editor with any trade gossip that they may consider interesting.

Editorial Notes.

THE Pharmacy Act (1868) Amendment Bill, brought in by Lord ROBERT MONTAGU, passed through committee on the 29th ult. The principal clause, as amended by the LORD ADVOCATE, provides that nothing contained in the first fifteen sections of the recited Act (those referring to the rules for keeping, dispensing, and registering the sale of poisons) shall affect any person who has been registered as a legally qualified medical practitioner before the passing of this Act; and that the said clauses shall not apply to any person who may hereafter be registered as a legally qualified medical practitioner, and who in order to obtain his diploma for such registration, shall have passed an examination in pharmacy. A second clause in the Bill removes the grievance under which assistants have laboured, by declaring that any three years' service as assistants to chemists and druggists prior to the passing of the Act of 1868 shall be deemed sufficient to entitle them to present themselves for the Modified Examination. In the original Bill it was necessary that they should have served the specified three years immediately prior to the Act passing. The time for making application to be registered is to be extended to the 31st of December, 1869. In exempting all registered medical practitioners in Great Britain from the operation of the Act, the Bill simply gives definite expression to the intentions of the authors of the original measure. The altered conditions under which assistants may present themselves for the Modified Examination will probably be generally accepted as satisfactory. The Bill will probably become law without any further change.

THE Dinner at the Freemasons' Tavern, on Wednesday night ought to be a success, if earnest work in a good cause entitles a man to public recognition. Mr. GEORGE WEBB SANDFORD has held the office of President of the Pharmaceutical Society for six years to some purpose, for his talents for business, his natural urbanity, and his consummate tact have been consistently exerted on behalf of

the best interests of Pharmacy. At some future day, when the good results of the legislation of last year become evident to all, Mr. SANDFORD's services will be better appreciated than they are at present. And yet we are quite sure that he will have no reason to complain of lack of sympathy on Wednesday.

Dr. MATTHIESSEN, since his removal to St. Bartholomew's Hospital, has continued his researches on the Opium Bases in conjunction with Mr. WRIGHT, and we are glad to hear that recent experiments have led to a remarkable discovery, which is likely to have important therapeutic applications. We are informed that these chemists have succeeded in obtaining a new base which has the composition of Morphia minus the elements of one molecule of water, and which produces striking physiological effects. It appears that this new base is absolutely devoid of narcotic properties, and that it is a most powerful emetic and contra-stimulant. When it is said that one-tenth of a grain subcutaneously injected will produce violent vomiting in about five minutes without evil after effects, we may fairly conclude that this new body will prove a valuable addition to our materia medica. We understand that Dr. GEE is carefully studying its physiological effects. According to all accounts, the emetic properties of the new base were so evident, that the investigators were soon sick of handling the substance. Surely it ought to be named "catamorphia."

THE Editor of this journal lives in an ordinary house and dresses like a common person—like a very common person, in fact. He hides his intellectual light under the bushel of respectability, and his neighbours, probably, set him down as an eccentric independent gentleman with a taste for explosions. His name being in the Red Book, of course he gets his due share of begging letters, trade circulars, and promising prospectuses. He is informed of every sale of bankrupt stock, and is never at a loss to know the prices of the Clinker Colliery Company's best coals, or of Logwood's fine old Ports—equal to South African. Occasionally, on the receipt of something in the guise of a letter, his natural amiability gives way to rage befitting the editor of a respectable journal. A few nights ago, on opening a neat square envelope, suitable for a cheque or an invitation to dinner, he discovered a little book about Dr. H—'s "Vital Restorative," a "new chemical combination of phosphatic salts, quinine, and iron, and other invigorating ingredients, containing all the essential constituents of the blood, brain, and nerve substance." This wonderful agent for the "restoration of nervous and muscular power" is prepared in "a liquid state" and also in "the dry, condensed form of a lozenge," and is sold in bottles or cases at 11s. each. The recommendations of this nostrum were cunningly blended with allusions and warnings specially adapted to work on the fears of nervous people and to entice weak young men into the trap of a rapacious quack. Though the Editor of this journal has only just enough muscular power to direct a magnum bonum, he thinks his nervous energy would have been quite equal to a kick, had Dr. H— ventured to deliver his disgusting little pamphlet with his own dirty hands.

"EVIL communications corrupt good medicines." We are indebted to Mr. HEATH, a homoeopathic chemist in Ebury-street, for this new copy-book text. The druggists of the old school, after reading his handbill, will admit that it is vain to make sacrifices to HAHNEMANN, while the odours of

their unclean allopathic drugs stink in the nostrils of the purists of the new school. Says Mr. Heath:—

"It is most important for the success of the homoeopathic treatment of disease that the medicines should be procured direct from a reliable homoeopathic pharmacy.

"Owing to the prevalence of homoeopathy, and the consequent increased demand for homoeopathic medicines, a practice has grown up lately amongst druggists of the old school to vend homoeopathic medicines. Such medicines, being exposed to the powerful odours of other drugs, are not to be relied on; any person, therefore, trusting to such, runs a risk of disappointment and danger."

We venture to remind Mr. HEATH that even the air of Eaton-square is contaminated with odours that may affect the medicinal properties of his globules. Would not the top of Snowdon be a good site for his pharmacy? Again, we cannot help thinking that some of the German and American tinctures imported by Mr. HEATH are dangerous companions for medicines of high attenuations.

MANY members of the Pharmaceutical Society, having come to the conclusion that the Council may be invigorated by the infusion of "new blood," have announced their intention of voting at the approaching election for Messrs. BETTS, DYMOND, and GISSING. These three gentlemen have long been active workers for the interests of Pharmacy, and were energetic supporters of the legislation of last year.

In our correspondence last month, "E. B. S." gave his version of a transaction which seemed to us to imply unwarrantable "sharp practice." According to "E. B. S.," a traveller representing a firm of truss-makers in Hull persuaded him to take some goods, on "sale or return," for which payment was subsequently enforced by legal process. We suppressed the name of the firm, but Messrs. SILCOX and CUZNER, of Prospect-street, Hull, state that they are the truss-makers referred to, and in a long letter intended for publication they tell a very different story. They say that their former traveller sold half-a-dozen spring trusses to "E. B. S." unconditionally, and that the purchaser did not refer to any arrangement for returning the unsold goods until he had been told that the traveller had left the firm. The first assertion is supported by the testimony of the traveller, who says, "I did not press for an order, and as to any remark respecting sale or return, none was made." Somebody's memory must be hopelessly defective, for according to "E. B. S." the traveller "persisted in booking some trusses, which he said he would take back again on the next journey" if not sold. In his published letter "E. B. S." states that he paid the money instead of contesting the claim in court, where he could only give his "unsupported word of truth in the matter;" but in his letter to Messrs. SILCOX and CUZNER he says that "his apprentice could prove that the goods were on sale or return." This reference to the apprentice weakens the charge against the truss-makers, and proves that "E. B. S." has not weighed the consequences of his contradictory statements. With truth on his side, and an outspoken apprentice in the witness-box, "E. B. S." might have confounded the traveller, and spared us the trouble of printing his "unsupported word of truth." As it is, we think most of our readers will admit that the "sharp practice" of Messrs. SILCOX and CUZNER has not yet been demonstrated.

Dr. Henry Trimen, F.L.S., has been appointed assistant in the Botanical Department of the British Museum. This appointment, though offering great opportunity for botanical investigation, withdraws its holder from medical practice. Dr. Trimen is, we understand, permitted to retain the Lectureship on Botany at St. Mary's Hospital.

Our Analytical Reports.

THE AMOUNT OF QUININE IN QUININE WINES.

BY HENRY MATTHEWS, F.C.S.

SEVEN samples of Quinine Wines have been examined. The whole of these samples were purchased in the ordinary way, over the counter, and varied considerably in price.

I. Nine fluid ounces, price one shilling. A clear fluid of a fine dark-golden colour, exhibiting the characteristic blue fluorescence of sulphate of quinine in a very marked manner.

Three fluid ounces furnished 2.2 grains of actual quinine, corresponding to 0.98 grains of sulphate of quinine per fluid ounce of wine.

II. Eight fluid ounces, price one shilling. Colour and fluorescence the same as the last.

Three fluid ounces furnished 2.17 grains of alkaloid, corresponding to 0.97 grains of sulphate of quinine per fluid ounce of wine.

III. Six fluid ounces, price one shilling. This possessed the same golden colour and marked fluorescence as the previous samples.

Three fluid ounces furnished 2.14 grains of quinine, corresponding to 0.95 grains of sulphate of quinine per fluid ounce of wine.

IV. Four-and-a-half fluid ounces, price tenpence. This was a pale-yellow fluid, with a strongly marked fluorescence. This preparation appeared to be a mixture of sulphate of quinine, citric acid, tincture of aurantia, and water, and not to have been prepared with orange wine.

Three fluid ounces gave on analysis 2.15 grains of alkaloid, corresponding to 0.96 grains of sulphate of quinine per fluid ounce of wine.

V. Six-and-a-half fluid ounces, price one shilling. This was a clear dark-golden fluid, having a strongly marked fluorescence.

Three fluid ounces furnished 2.21 grains of alkaloid, corresponding to 0.99 grains of sulphate per fluid ounce of wine.

VI. Four fluid ounces, price two shillings. This was a pale fluid similar to Sample IV., and evidently dispensed from the shelves of the shop, and containing no orange wine.

Three fluid ounces furnished 2.14 grains of quinine, corresponding to 0.95 grains of sulphate per fluid ounce of wine.

VII. Four fluid ounces, price sevenpence. A very dark-golden yellow fluid, with a marked fluorescence.

Three fluid ounces gave 2.2 grains of alkaloid, corresponding to 0.98 grains of sulphate of quinine per fluid ounce of wine.

In making the above determinations it is necessary to observe that the amount of quinine may be very slightly over-estimated on account of the difficulty of removing the whole of the moisture from the precipitated quinine; and on the other hand, will be somewhat under-estimated on account of the minute loss caused by the slight solubility of the precipitate in both water and ammonia. These minute errors may be taken as correcting each other, and the results may be considered as sufficiently accurate, especially when it is noted how near the quantities are to those required by the Pharmacopœia. This adherence to the Pharmacopœia standard is still more satisfactory when we consider that

the whole of the samples examined were purchased in poor, or comparatively poor neighbourhoods, viz., in or near Tottenham Court-road, the Seven Dials, and the purlieus of St. Giles's and Soho-square. The only remarkable feature is the difference of price, ranging as it does from less than three half-pence to sixpence per ounce, and also the fact of two samples being evidently mixtures dispensed from the shop shelves, instead of being made with orange wine as directed in the British Pharmacopœia, a proceeding which, although to be deprecated, can scarcely be considered culpable, inasmuch as in both cases the proper quantity of sulphate of quinine was used.

A NEW HAIR RESTORER.

Since the publication of the report on Hair Restorers, one of a different composition has been examined. This consists of a solution of nitrate of lead, to which a solution of hyposulphite of soda has been added, until the white precipitate at first formed is dissolved in the excess of the precipitant; the restorer is then made up with water and perfume. This mixture, on being kept even in a closely corked bottle, has a tendency to deposit a black precipitate of sulphide of lead.

Pharmaceutical Society of Great Britain.

SPECIAL EVENING MEETING.

Wednesday, May 5th.*

MR. H. SUGDEN EVANS, VICE-PRESIDENT, IN THE CHAIR.

THE minutes of the preceding meeting having been read and declared correct, and subsequent donations to the library and museum acknowledged,

The CHAIRMAN reminded the meeting that they were assembled for the purpose of continuing the discussion of the very important subject brought under their notice at the last meeting by Professor Redwood, and invited Mr. Carteighe to recommence the discussion.

MR. CARTEIGHE said he did not agree with the most important practical suggestion put forward by Professor Redwood, namely, that in which the Professor proposed to modify or bend the existing system so as to connect it with the metric, and give the public a definite idea of the value of some of the metric weights and measures, thereby effecting a gradual introduction of the latter; he considered there was a great objection to bending the present system. Some persons thought that a division by eights would be the best, but this was not a fit subject for present discussion; for present purposes we must assume that the decimal system was the best system. He did not think that it would be easier to appreciate the fact that a *telram* was equal to a drachm, and hence to four grammes, than to remember the value of four grammes as such. In France it had been found necessary to adopt such a plan, because it was required to convey information to vulgar minds; but in England we should not spoil a good system by doing what was unnecessary for an educated mind; in fact, rather than adopt Professor Redwood's plan, we should wait for the gradual familiarity bred by practice. Mr. Carteighe considered that it was of importance to make some suggestion or recommendation to the General Medical Council on the point. In none of the degrees was there any test bearing upon this system, whereas a medical student should be expected to know the principles, say, at the preliminary examination, and he would then be in a position to help at some future time in completing the change. In the

examinations of the Pharmaceutical Society a theoretical and practical knowledge of the system would also be necessary. He would not say that the Board would require a candidate to transcribe a prescription on the French system to its equivalent in the English, or *vice versa*, but the Board had the power, and it was incumbent on it to see that applicants had some knowledge of a matter of such importance. In respect to the processes for volumetric analysis given in the Pharmacopœia, the examiners would, for instance, be better satisfied with candidates if they performed those analyses on the new system. A very important point for consideration was how to identify the various weights in our minds; to effect this no better plan could be conceived than that the Pharmaceutical Society should assist provincial societies in procuring complete sets of the weights and measures of the metric system, so that anyone might handle and become practically acquainted with them. In adopting the metric system, we must, in our practice as pharmacologists, be prepared to accept greater responsibilities. No nice relation could be found between a system of tens and one of eights. It had consequently been urged by Dr. Attfield and others, as well as by the speaker himself, that tables should be published with the relative weights of each system side by side; but such a plan would cause much confusion. A book, however, could be compiled as an addition to the Pharmacopœia, containing all the formulæ with equivalents on the decimal system arranged side by side; such a book would be much sought after. In the French Codex one chapter was devoted to extracts from foreign Pharmacopœias, with the equivalents on the metric system on the opposite page in decimals, the original quantities, English or otherwise, being printed at length in letters. Mr. Carteighe would recommend such a plan as a feature of the proposed supplement to the Pharmacopœia. Much confusion would be avoided by its adoption. In reference to the weighing system of the French Pharmacopœia, it would be difficult to acquire the necessary familiarity, so that we must here for the most part adhere to our present custom; for although in some cases it would be possible to adopt the former, yet it would in most be difficult. A card or table might be published, giving the equivalents of the various weights most in use, and showing the most important relations. A difficulty might be encountered in respect to bottles, but in a little while it would be convenient to assimilate these to some extent, and in the meantime marking them would tend to familiarize the public. It would be hopeless to expect that the old system would give place to the new, or even that any familiarity could be acquired in a short space of time; even in France the old weights are still in use to a great extent. For the present, indeed, what we really want is a plan for educated men of business.

Professor Redwood thought that it would conduce to a thorough ventilation of the subject, and introduce, perhaps, a new feature, if he read a letter he had received from Mr. T. Lowe, of Liverpool. This gentleman, admitting the superiority of the decimal system over our *no system*, yet felt sure of its ultimate abandonment, considering it only a question of time. The main object of his letter was to set forth the advantages of the number eight over those of the number ten, drawing especial attention to the great advantage that it admitted of easy subdivision down to unity; whilst the figure ten enjoyed a quality absolutely the reverse, namely, that it could by no simple process be subdivided down to unity.

Professor ATTFIELD, in allusion to the remarks in the letter read by Professor Redwood, said there were immense advantages in a duodecimal system over a decimal, and in an octaval over either; but as the world's system of

* Reported specially for this journal.

figures is decimal, it follows that our weights, etc., must be decimal likewise. It would be interesting to know that the octavial system had been well set before pharmacutists by Mr. Proctor, who had given in the volume of the *Pharmaceutical Journal* for 1864, a more concrete expression to the idea than had the writer of the above letter. For reasons which had been stated, he did not, however, think that the present discussion admitted of any reference to the octavial or duodecimal system.

Mr. BOTTLE believed that the octavial was the right system of division; but since the decimal had been adopted by other countries, we must ultimately follow their example. Such a companion to the Pharmacopoeia as had been suggested by Mr. Carteighe would conduce to facilitate its adoption. Young men should, however, at once make themselves acquainted with the decimal system, as, unless advantage were taken of present opportunities, the difficulties might prove insurmountable at a later date.

Mr. HASELDEN said that we must ultimately adopt the decimal system, not, perhaps, because it was the best, but because it was the most general. With a little study, young men would find no difficulty in mastering it. He agreed with Mr. Carteighe in the proposal for a supplement to the Pharmacopoeia, but would hardly care to see the metric weights arranged side by side with our own in the Pharmacopoeia itself. In some instances it would be easy to get the relative weights, in others not so; in fact, it would sometimes be very troublesome, so much so that Mr. Haselden would rather see the Pharmacopoeia re-written. It would, again, be rather difficult to get the medical profession, though highly trained, to make so radical a change, as is proved by the great difficulty that has been encountered in persuading them even in small proportion to discard drachms, scruples, etc.

Mr. CARTEIGHE added that he would also recommend that the dose be written in such a manner as to afford an illustration of the relation between the two systems, for instance, 15 grains = 1 gramme. In respect to prescribing, the process of fusion would be much facilitated by prescribing in doses, and ordering so many doses.

Mr. MORSON asked whether any table had been prepared showing the equivalent quantities on the two systems. Commercial men used a little book showing the cost of equivalent quantities.

The CHAIRMAN could not foresee any very great difficulties. Mr. Carteighe had already brought very prominently before the meeting the fact that the Board of Examiners would require a familiarity with the metric system on the part of candidates. He had also proposed that the Pharmaceutical Society should assist provincial societies in the matter of models. The Chairman thought that the society should first procure a perfect set for their own museum. He generally objected to the bending of our old system, as proposed by Professor Redwood.

Mr. MARTINDALE thought that some difficulty would be encountered in applying the system to dispensing, and approximating the metric weights and measures with the usual doses. He found that medical students were taught on the metric system in laboratories at hospitals, and had some difficulty in appreciating the value of grains, drachms, etc. He considered an octavial system an impossibility.

Professor REDWOOD would bring forward two considerations—1st. That the great defect of the present system is that we have no integer between the grain and the ounce, neither is there any relation between them. The clumsiness of this arrangement was brought prominently forward in the work of compiling the Pharmacopoeia, so much so that our present system can only be considered as a temporary

expediency. 2nd. The subject has occupied, and still occupies, the attention of very eminent men, who are impressed with the necessity of adopting a new system in this country, who generally, though not uniformly, agree in adopting the metric system, not because it is perfect, but because it is the best yet proposed, and the most likely to be generally adopted, and who have looked to the Pharmaceutical Society as likely to aid their object, and have sought the opinions of its members as practical and able men. Professor Redwood confessed that he did not consider that the metric system was perfect, neither did he suppose that anyone else did. He was, however, rather surprised at a statement that he had been accustomed to condemn the system, when he had always regarded it as the most perfect system yet devised. The integer, however, was only selected on theoretical grounds; our own yard would have been much more convenient. The plan of dividing by ten, though generally convenient, might sometimes lead to inconvenience. One difference between the metric and our system was, that ours was founded on experience, and the metric on theory. The relations between English weights and measures, though not uniform, were convenient, inasmuch as the various integers were such as we wanted. A remedy would have to be found for the defects in our system. How was this to be done? There were many men of eminence who did not consider the decimal system the best, and, therefore, would not recommend it; but the great mass of men waived its slight defects, because it was the only system likely to be generally adopted. The English were the only advanced nation who had as yet done nothing to effect the adoption of this system; if we adopted it, it would soon become the international system. The difficulty was not so much in mastering the theory of the system, but in diffusing a knowledge of the values of its integers; and this had been the great object of his proposals. This would not, however, be effected by looking at a set of models in a museum. Professor Redwood would like to see the weights marked on coin, the measures on postage stamps, etc. By thus associating the integers with objects with which we are familiar, we should do much to assist the ultimate adoption of the system. Difficulties would also be especially encountered by prescribers. Professor Redwood agreed with Mr. Carteighe that a knowledge of the metric system should be enforced in medical examinations. The introduction of metric weights and measures into the Pharmacopoeia would do much good, but the difficulties would be very great. Professor Redwood would not, however, accede to such a proposal, unless the weights and measures given were the exact equivalents, since it was not only desirable to familiarise, but also to induce dispensers to make up their medicines on the metric system. He would, however, prefer a supplement, because we do not want to know the exact value of so many ounces, but to acquire an idea of the value of the various integers.

The CHAIRMAN announced that Professor Atfield would be very happy to present his set of models of weights and measures of the metric system to the museum of the Society; also that the *Conversazione* would be held on Tuesday, May 18th, to commence at half-past eight. The Society would be very glad to accept the loan of any articles for exhibition that might be of interest to pharmacutists. He also reminded the meeting of the interesting event to take place that day fortnight, when he hoped to see many present at the dinner.*

* In our report of the April meeting, the remarks of the member who opened the discussion on the *Patent Medicine Stamp* were not accurately given. According to a corrected report, Mr. Burrow said he had been induced by several members of the Society to bring forward the subject of the patent medicine stamp, and he, therefore, desired to give notice

Abstracts of Foreign Papers.

RESEARCHES ON THE PREPARATION, PROPERTIES, AND COMPOSITION OF EMETINE.

M. LEFORT contributes to the *Journal de Pharmacie et de Chimie* some remarks, and the record of some experiments on the preparation, properties, and composition of emetine. Referring briefly to the researches of Pelletier, Dumas, Calloud, Merck, and Leprat, chiefly in respect to their methods of extracting the emetine contained in ipecacuanha, the author proceeds to describe the process adopted by him, which is essentially that of Leprat, although subjected to important modifications. Leprat's process may be outlined as follows:—Powdered ipecacuanha is exhausted by alcohol, and the partially clarified tincture evaporated to a syrupy consistence on the water-bath. The residue is introduced into a stoppered bottle, together with some strong solution of caustic potash, containing a quantity of potash equivalent to two parts for every hundred of powder employed, and chloroform nearly equal in bulk to that of the mixture. The emetine is completely extracted by the addition and removal of successive quantities of chloroform, the operation being continued until the chloroform ceases to become coloured by contact with the mixture. The whole of the chloroform charged with emetine is then filtered, and distilled; the emetine is extracted from the residue by means of a feeble acid, and precipitated from the solution thus obtained by the addition of the exact quantity of ammonia necessary to neutralize the acid; the precipitate is washed by decantation, dried at a temperature below 120° F., and the last traces of resinous matter removed by treatment with a little sulphuric ether. Emetine thus prepared is in the form of a very light grey powder; if very pure, it is white. The author then details the more important physical and chemical properties of emetine, and publishes the results of some experiments made with the object of discovering the exact composition of emetine and its salts; the uncrystallizable nature of the latter renders this a matter of some difficulty.

IMPURITY OF COMMERCIAL CHLOROFORM.

M. PERSONNE has demonstrated the nature of the alteration effected in chloroform by exposure to air and light. Chloroform thus exposed becomes acid, and emits irritating white vapours, which are, according to M. Personne, chiefly those of chlorocarbonic acid derived from chlorocarbonic ether accidentally contained in the chloroform, and not formed directly at the expense of the chloroform. The removal of the chlorocarbonic ether would therefore probably increase the inalterability of chloroform. M. Personne has, in fact, found that rectification over caustic potash will effect the destruction of this ether, and ensure the continued purity of the sample so treated.

OXYCHLORIDE OF BISMUTH IN COMMERCIAL SUBNITRATE OF BISMUTH.

In the *Repertoire de Pharmacie* **M. LE MOINE** draws attention to the adulteration of subnitrate of bismuth with the oxychloride. In proportion equivalent to five per cent. or under, the author considers that it may be looked upon as an accidental impurity, inasmuch as commercial nitric acid

that, with the permission of the President, it was his intention to introduce this subject at the next general meeting in May, with the view of devising some plan for the total abolition of the stamp. He hoped he should then be able to lay before them some scheme by way of substitute; and he begged all those who possessed influence, either for or against the proposal, to attend the meeting. It was not his intention that evening to dwell upon the subject, but merely to state, which he was able to do on good authority, that if they, as a body, were unanimous, the removal of this objectionable impost would be speedily and satisfactorily accomplished."

invariably contains a small amount of hydrochloric acid; but if the proportion exceeds this per-centage, it must be regarded as an adulteration. To determine the amount of oxychloride in any given sample of subnitrate of bismuth, **M. Le Moine** recommends that the chlorine be estimated as chloride of silver, and the corresponding amount of oxychloride calculated therefrom. To effect this, dissolve a weighed quantity of the subnitrate in hot nitric acid, precipitate the chlorine by the addition of a slight excess of nitrate of silver, and wash the precipitate several times by decantation with boiling water, Dry and weigh. The composition of oxychloride of bismuth being represented by the formula $B; ClO$, 143.5 parts of chloride of silver will represent 250.5 of that substance.

VOLUMETRIC SOLUTION FOR THE PREPARATION OF PHOSPHORISED OIL.

M. DANNECY recommends a somewhat dangerous method for the preparation of phosphorised oil, namely, a method dependent on the use of a volumetric solution of phosphorus in bisulphide of carbon. The solution is prepared in the following manner:—A weighed quantity of phosphorus is reduced to powder by agitation under warm water until it becomes cold; the requisite quantity of pure bisulphide of carbon is then added, whereby the phosphorus becomes dissolved; the greater part of the water being removed, the solution is transferred to yellow glass bottles, a layer of water some eighths of an inch in depth being left to protect it. **M. Danneey** regulates the proportions of phosphorus and bisulphide of carbon so as to obtain a solution containing five per cent. of phosphorus. To prepare the phosphorised oil, it is only necessary to weigh out a quantity of oil, and add the necessary amount of the phosphorus solution by means of a graduated *pipette*. Exposure to the air or to a slight heat for a short space of time will suffice to remove the odour of bisulphide of carbon attaching itself to phosphorised oil prepared in this manner.

Veterinary Notes.

BY W. HUNTING, M.R.C.V.S.

TONICS.

THE vegetable and mineral world both afford considerable latitude in the choice of tonics; though in veterinary practice only a few are commonly used. Our selection is guided by the cause of the debility for which we give them.

As a rule, we may say that when the weakness depends upon some blood-poison, as "farcy," or some excessive drain upon the system, as great suppuration, dropsy, etc., we make use of mineral tonics; when it is the sequel of some acute disease, as pleurisy, or accompanied by an irritable stomach, we prefer the vegetable tonics. We may, and frequently, prefer to combine tonics with other medicaments, as with stomachics or diuretics. As regards the form of administration, balls or powders are the most convenient. Sometimes draughts are necessary, as in the combination of stimulants, as ether, etc., with tinctures.

I may here give a form I consider very valuable for cattle convalescent from any very exhaustive disease, pleuro-pneumonia, or during the latter stages of red-water:

Ether Sulph., ʒij.

Tr. Ginger, ʒij.

Tr. Gentian, ʒij.

Four doses—one every six hours in a pint of gruel.

To go back to the mineral tonics, I may say that I never

prescribe the acids, nor do I place any reliance on the preparations of silver or zinc. Iron, copper, and arsenic are my favourites. Of the preparations of iron, the sulphate is the only one commonly used for horses and cattle. It is generally given combined with some aromatic, as

Ferri Sulph.,
Gentian Pulv., } Equal parts.
Carui Pulv.,

made into balls with treacle, or given in powder with the food. Coriander seeds or ginger may be substituted for the carui. Sulphate of copper is sometimes used in place of iron, but it seems of special value in cases of chronic nasal discharge. The ordinary dose of either sulphate of iron or copper for horse or ox is two drachms, but in the above cases can be doubled. I have known a ball containing five drachms of sulphate of iron given daily for three weeks, with no other effect than blackening the faeces and checking the nasal discharge.

The tinct. ferri mur. and syrupi ferri iodid. are valuable preparations for dogs.

The following is a good form for a dog recovering from pleurisy:—

Syrup Ferri Iodid., ʒi.
Infusion of Gentian, ʒiij.
Tr. Ginger, ʒjss.

A dessert-spoonful three times a day. The tinct. ferri mur. is used in doses of from ten to thirty drops, and may be given with infusion of quassia.

Another valuable mineral tonic is arsenic, sometimes given as a powder, incorporated with sugar of milk or carbonate of potass, or it may be made into powders, as follows:—

Arsenic Pulv., grs. x.
Cantharides Pulv., grs. v.
Ferri Sulph. Pulv., ʒij.

Once a day with the food.

Arsenic is specially useful in cases of broken-wind, chronic cough, and in such skin diseases as do not depend upon parasites.

The best preparation of arsenic for dogs is Fowler's Solution. I steal the following:—

Fowler's Solution, ʒj.
Syrup of Ginger, ʒiij.
Water, ʒv.

A table-spoonful thrice a day. Useful in skin diseases, and in chorea, or other nervous affections following distemper.

The only other mineral substance I shall mention is common salt, equal parts of salt and gentian forming about the best mild tonic I have ever used. A table-spoonful twice a day for horse or ox.

As regards vegetable tonics, I am inclined to place cinchona first and nux vomica last; a good medium is the much-used gentian.

What are called condition powders are, as a rule, merely tonics, with some aromatic, and, perhaps, a little diuretic. As a sample, I offer the following:—

Gentian,
Ginger,
Carui,
Linseed Meal, } Equal parts.
Salt,
Nitro,

A more powerful tonic for horse or ox is—

Cinchona Pulv., ʒiv.
Quassia or Gentian, ʒij.
Aniseed, ʒij.

Can be given as a powder, or made into a ball with treacle.

For a dog, the following is recommended:—

Pulv. Cinchona, ʒiv.
Ext. Gentian, ʒij.

Make into forty pills, and give two twice a day.

The alkaloid quinine can be readily made into pills with a little confectio. Dose, 1 to 8 grs.

Nux vomica and strychnine as nerve tonics I have found very disappointing. The doses for dogs are—

Nux vomica, $\frac{1}{4}$ —1 grain.

Strychnine, $\frac{1}{30}$ — $\frac{1}{10}$ grain.

SCAB IN SHEEP.

This disease, usually vaguely described as "a skin disease," is of a contagious nature, and due to the presence of minute insects called "acari." The cure, then, depends upon killing these parasites. This can only be effectually done by those who know something of their life and habits.

An acarus is about the size of a pin-point, and requires to be examined under a microscope. It has an oval-shaped body, and long feelers at each end. Its presence on a sheep is proof positive of the existence of scab. Their detection is arrived at by gently scraping a little scurf off an affected part, and examining it under a microscope with a half-inch power.

The acari, on reaching the skin of a sheep, speedily burrow into the skin, and there bury themselves for a time. Here the females produce their eggs, and in about sixteen days reappear with their litters of about a dozen young ones. These young ones again burrow, multiply, and reappear; so that in a short time an animal becomes covered with myriads.

The symptoms of scab are in accordance with the movements of the acari. When the insects enter the skin, minute red spots are left. Shortly, little pimples appear, which change in colour and size till a pustule is formed, and this bursts at the time the young brood is ready to appear on the surface. Of course, intolerable itching accompanies all this, and the rubbing and scratching of the animal only aggravates the pustules, destroys the wool, and makes sores, which, drying, form the scabs from which the name is derived.

It is important also to remember that acari may exist for some weeks on loose portions of wool, or on hurdles and trees against which a sheep has rubbed itself, and may then induce disease in any healthy animal coming in contact with them.

Treatment.—The foregoing remarks indicate that not only is it necessary to kill the parasites on the sheep, but also to give a second dressing, for the benefit of those which were beneath the skin on the first occasion. They also indicate how we should guard against future contagion.

Numerous substances are capable of destroying acari, but, unluckily, some of them may also destroy the sheep. Mercurial ointment is used very largely for smearing sheep, and washes containing corrosive sublimate have also been used. Both preparations are dangerous, and should not be employed. Arsenic is very largely used as a sheep dip, but it, too, is objectionable as poisonous. I do not mean that there is any chance of a sheep being poisoned by absorption of poison through the skin. I am one of those who consider it proven that no substance in watery solution can possibly be absorbed by a sound skin. Ointments, however, applied by rubbing, as mercurial ointment, are most undoubtedly dangerous. The following is a good arsenical bath for fifty sheep:—

Arsenic, 20 ounces.
Soda Ash, 18 ,,
Soft Soap, 60 ,,

Add to this five gallons of hot water, and then forty-five gallons of cold. In this dip, the proportions are such as to leave no excess of alkali. Mind, I only recommend this if a person *will* have an arsenical dip. My great objection to these poisonous sheep-dips is one of expediency. We have non-poisonous dips which are equally efficacious, then why use these, and incur the risk?

Sulphur is undoubtedly a valuable paraciticide, and may be used simply as an ointment, or in combination. Tobacco is a very efficacious and convenient weed. It must not, however, be boiled, as the heat drives off valuable volatile principles. It must be prepared by infusion. The following form will not disappoint:—

Tobacco, 1 lb.
Sulphur, 1 lb.
Size, 1 lb.
Water, 5 gallons.

The sulphur, of course, is merely suspended, and will require frequent stirring when in use. The object of the size is to make the dip slightly sticky, and thus allow the fleeces the better to retain some of the sulphur.

There are in the market two good proprietary dips, "McDougald's" and "The Glycerine," both of which bring certain destruction to acari. I prefer the latter, as it contains no alkali, the presence of which too often deteriorates the wool. Remember, one dressing is not sufficient for the cure of scab, as it cannot affect the eggs or the insects beneath the surface. A second application is needed when these reappear—i. e., in about sixteen days.

Prevention should be carried out by keeping healthy sheep away from diseased ones, and from all places on which acari may be left, as railway trucks, hurdles, etc.

Dentistry.

THE RELATIONS OF MECHANICAL TO OPERATIVE DENTISTRY.

BY P. C. BRANCH, VINTON, IOWA.*

THE introduction of the vulcanite base, greatly simplifying and cheapening the process of mounting and inserting artificial dentures, seems to make a readjustment of the relations of these two branches of dentistry necessary.

While we were restricted to the use of metallic plates, involving the various nice processes of alloying, forging, and rolling the metals into plate; moulding and casting dies, swaging plates, grinding, arranging, and articulating the teeth, soldering them to the plate, and finishing in a neat and workmanlike manner, the process was so complicated as generally to deter from undertaking it all who did not *desire* and *intend* to qualify themselves thoroughly for the skilful practice of operative dentistry also. But the introduction of vulcanite has changed all that, and now there are men all over the country who know just enough about the teeth to destroy them; who have managed to pick up, by "hook or by crook," a knowledge of the simple mechanical process now so much in vogue. The result is, that they go about the country extracting, perhaps, bushels of teeth that might and ought to be saved. Conscious of their inability to successfully fill any but the simplest cavities with anything but some cheap plastic material, even their successes (?) in this direction tend to discourage the practice of filling teeth at all.

This, added to the cheapness of their mechanical work

and their peripatetic mode of operating in the rural districts, throws operative or conservative dentistry wholly in the background, so that in traversing such localities you will find a large proportion of the people wearing artificial teeth, and a still larger one whose teeth are decaying, unwilling to make any effort for their preservation, and patiently, even cheerfully, anticipating the time when they will exchange them for those that "won't ache."

Now, I believe that a proper condition of things can only be restored by a change in the relations of these two branches of dentistry. Let us cease to regard mechanical dentistry as *professional* labour, and throw it open to competition, like any other "trade" (if you will), and then by employing mechanics at *mechanics' wages*, underbid and drive the humbugs that are everywhere to be found from the field, with the irresistible arguments of "the cheapest and the best." Thus the mechanical department will come under the supervision of the professional; and thus the professional, in the exercise of good common sense, and enterprising business qualifications, can make the mechanical its willing and obedient servant, unable to exist without the oversight of its master. Under such oversight the reckless and wicked extracting of valuable teeth must cease; and a correct and healthy popular sentiment as to the possibility and the means of preserving those organs will be developed.

While I would have the fraternity cling with the utmost tenacity to professional feeling and standing, as related to conservative and surgical dentistry, I would have them withdraw that feeling wholly from the labours of the laboratory.

It is simply absurd to call that a purely mechanical process, which may be mastered by an ingenious man in from six weeks to three months' professional labour. An intelligent, discriminating public only laughs at us for doing so. The relations of the two correspond very nearly to those of physician and druggist. In the city the former prescribes and the latter compounds the remedy. In the country the former does both; and yet the prescribing of remedies is not a trade, nor the compounding of drugs a profession. So the country dentist may find it necessary and profitable to perform the mechanical labour himself, without changing the true relations of the mechanical and the professional.

For more than twenty years I have adhered to the old idea, and insisted upon *professional* prices for mechanical labour. Meanwhile, professional, and especially mechanical, quacks have multiplied indefinitely; and notwithstanding I am able to point to teeth preserved ten, twelve, and fifteen years by my operations, these fellows are steadily undermining confidence in conservative dentistry.

Have not I, have not all of us, indiscreetly driven the people from us and lost our influence over them, for our good as well as theirs, by this course? Have we not thus given "aid and comfort" to our worst enemies and theirs?

FRAILTIES OF THE FACULTY.

AS Pharmacists have often had to complain of the reckless stone-throwing of medical critics, we do not hesitate to hurl a pebble at the great glass house of the medical profession. A correspondent has pointed out the pane that ought to be smashed, and if our pebble be well-aimed we believe that many fair-dealing physicians will commend us for having cleared the moral atmosphere of the profession by a little ventilation.

The hero of the simple story told by "A Country Chemist" in another column, is an eminent medical man whose name, if we thought fit to publish it, would be deemed ample evidence of the purity of the motives by which his

* Dental Cosmos (Philadelphia), February, 1860.

conduct was determined; and if the statements of our correspondent had not accorded with our own experience we should have regarded the story as an elaborate libel. We have reason to believe, however, that the system adopted by this famous practitioner is accepted by many physicians as a legitimate commercial development of their calling. Mindful of the proverb, they take care of the pence knowing that the pounds, or rather guineas, will take care of themselves. The case brought forward by our correspondent illustrates a common practice and has therefore far greater importance than it would have if it merely indicated a solitary instance of unprofessional conduct.

A country chemist, is often asked to recommend a London physician whose skill and advice are most likely to be especially applicable to the invalid's complaint. He is probably able to give his customer good counsel, and we need not say that he recommends a doctor to the best of his discrimination and with perfect disinterestedness. Now if that doctor has been successful in his profession, it may be regarded as certain that he possesses at least this one essential qualification—the art of winning the confidence of those with whom he comes into contact. To a patient who goes to consult him, and who trusts as implicitly in his good faith as in his skill, his lightest words are sure to be accepted as oracular. Every suggestion he may make with reference to habits, diet, and exercise, is carefully noted and remembered; and surely, if he appears particularly anxious about the exact preparation of the medicines he is ordering, and doubtful, or more than doubtful, as to the competence of the country chemist, the patient will gladly accept his recommendation of a particular establishment, and will be as easily imposed upon by the mystic and coincident hints of the doctor and the chemist, as Madame Rachel's clients were by declarations respecting the virtues of Jordan Water.

Now let us imagine such scenes as this being enacted in West-end Consulting Rooms scores, and perhaps hundreds, of times every day, and we shall have an idea of how widely the seeds of mistrust are scattered among the higher and middle classes of society throughout the length and breadth of the land. It is glorious to have a giant's power, but it is dangerous to use it like a giant. First of all, however, we will clear our ground before us by admitting all that can be granted in common reason and honesty. A physician may wish to prescribe a certain medicine which he knows is rarely kept, or which may be a speciality of one firm. We see no earthly reason why he should be precluded from so doing, and assuredly in such a case common sense and politeness would induce him to tell his patient where the medicine might be procured. Or it may be that he has an unreasonable, but still sincere and conscientious, belief in the natural stupidity and "unscrupulousness" of provincial druggists; and therefore recommends a pharmacist on whom he can depend to dispense the prescription. His conduct is excusable if his deplorable opinion of country chemists is unforgotten, and strong words cannot be applied to it, though we maintain that no man is justified in casting injurious imputations so recklessly about him. Moreover, we will admit—that many in both professions would be unwilling to allow—that it is just possible for a doctor to enjoy an annual income from a chemist and yet not sacrifice his honour if in carrying out his part of the contract, he will always entirely avoid the furtherance of his own interests at the expense of the interests of others. But mortals are few and far between who can be trusted with such a weighty if, and doctors are no more than mortals. Here then we have marked the latitudes within which in our judgment medical men should restrain their commercial greed. But these bounds are not wide enough to compass the desire for

wealth which occasionally seems to be a special snare for men whose pursuits should be high and honourable. Can any one be charitable enough to think no evil of the doctor who should gravely suggest a doubt to his innocent and confiding patient as to the possibility of obtaining a prescription accurately dispensed from any but one establishment, when the ingredients of the prescription in question were, Pil. Aloes Dil., Tinct. Cinchona, and Ammon. Sesquicarb.? Surely it is asking us to believe almost too much in the excellence of human nature, to assure us that the doctor only sought his patient's welfare and looked for no further reward. Very probably the patient is nervous and delicate; and on these accounts is especially prone to entertain such suspicions as may be offered to him or her. On these very accounts, too, the same gentleman or lady may have been one of the country chemist's best customers until he was unfortunate enough to cut the ground away from his feet by his recommendation of Mr. A. or Dr. B. We shall not enlarge on the unkind return the country chemist thus often gets; we claim only justice and will not even look for such Utopian fruit as gratitude. But we say deliberately, that with no adequate reason, and for a paltry personal advantage, to insinuate doubts about the competence and the integrity of a tradesman, whose business depends to a great extent on the continued confidence of his customers, is a wantonly cruel exercise of power, and is a slander which deserves to be characterized as dishonest and mean. Ninety-nine out of every hundred persons who thus become inoculated with distrust, avoid all mention of the doctor's remarks to the druggist either from motives of delicacy or from carelessness, and thus the injured man has no opportunity of fairly combating the insinuations of his insidious traducer. His business suffers, however, none the less certainly when he has come to be regarded as only fit to supply house medicines or fancy soap.

Were it not pitiful it would be laughable to see a physician not satisfied with the magnificent guinea he has earned in one five minutes, actually devoting another five minutes to the task of squeezing a further ninepence or shilling out of his unfortunate client, and this by a process which costs something of that honesty which should be so dear to him. The guinea was fairly gained and no one grudges it. But we must add, as a summary of what we have said that the ninepence is the result of dirty work. If a doctor considers it consistent with his own dignity and that of the profession to which he belongs to become the lackey and touter for a business firm, let him do so by all means. But he should tout openly and fairly. Let him get between two boards and receive daily wages for assisting in legitimate advertising, but let him not join in a practice which demands the constant habit of discrediting another's reputation.

REPORT OF THE EDINBURGH COMMITTEE ON THE ACTION OF MERCURY AS A CHOLAGOGUE.*

A BELIEF in the cholagogue action of mercury on the liver is almost universal among medical men and among the public at large. In every work on Materia Medica, it is assumed as a settled fact that mercury increases the biliary secretion; and every lecturer on therapeutics inculcates it as a well-established truth. For centuries, the treatment of diseases of the liver, especially in our Indian possessions, has had for its chief feature the

* From the *British Medical Journal*, May 8. The Report is printed at length in the same number.

various methods of administering mercury. Even at the present day, although the abuse of this drug has been decried, its employment is still thought necessary in some form or other of hepatic disease. We shall not enter upon the discussion of its merits or demerits—the wonderful cures which it has effected, according to some; or the injured health and shattered constitutions which it has produced, according to others.

There can be no doubt that the answer to the question, whether mercury did or did not increase the biliary secretion, had become one of paramount importance; but the inquiry involved labour and difficulties which few were prepared to encounter. We are proud to say that a Committee of Members of the British Medical Association at length undertook the task; and their Report has definitely determined that mercury, in whatever manner, dose, or form it may be administered, has not the slightest influence in increasing the flow of bile from the liver.

"If," says the Reporter, "the refutation of a wide-spread error be as important as the establishment of a new truth, the practical advantage of demonstrating that mercury is not a cholagogue cannot be too highly estimated." We agree with the remark, however, made by Mr. Flower, as President of the Physiological Section of the British Association last year at Norwich, where the Report was read; viz., that this is understating the value of the result. The refutation of a wide-spread error of this kind is much more important than the establishment of a new truth, inasmuch as the injury inflicted by the universal assumption of a false rule of medical practice produces injury which it is impossible to estimate. Whatever opinion, therefore, be held as to the value of mercurials in hepatic diseases, no one can doubt that, looking at their powerful effects on the human frame for good or for evil, the conclusions involved in the Report, if correct, constitute an immense gain for medical knowledge.

The steps of the inquiry, and the results brought out, are shortly as follows:—

1. The amount of bile in the fecal evacuations bears no relation to the quantity secreted by the liver. Purgatives certainly increase the amount of unchanged bile in the stools; but this is because they augment the rapidity of its passage through the intestinal canal, and thereby prevent its absorption and decomposition. The idea that inspection of the feces can inform us how much bile is formed, is, therefore, erroneous. The only method of determining this point is by making fistulous openings into the gall bladders of animals, tying the common ducts, and measuring the quantity produced.

2. The history of what was previously known as to the amount of bile secreted in dogs, without and with mercury, was undertaken by Dr. James Rogers, a gentleman who had long practised medicine at St. Petersburg. He has an intimate knowledge of continental languages, and has made therapeutics a special study. He shows that, since the days of Haller, there is no well-observed fact which indicates that mercury acts as a cholagogue.

3. All the operations were performed by Dr. W. Rutherford, who gives a minute account of the best mode of producing biliary fistulae, and the manner of collecting the bile. It was not without many failures and repeated disappointments that the experience was acquired which at length enabled the Committee to arrive at greater success in a larger number of cases than has characterised any previous investigation of a similar character.

4. A special investigation was next undertaken and carried through by Dr. Rutherford, to ascertain whether the dog was capable of being influenced by mercury in the same way

that man is. It would have been obviously useless to have entered upon so laborious an inquiry with this animal, unless that point had been satisfactorily ascertained. It is conclusively shown that the dog is affected by mercury exactly in the same way as man; that he presents the same symptoms when affected by the drug; and that, when poisoned by it, the same *post mortem* appearances are produced. A complete refutation is subsequently given to the opinions of those who imagine that observations on dogs can tell us nothing of the influence of mercurial preparations on the human subject.

5. Thus instructed, the Committee succeeded in making the most accurate observations as to the amount of bile secreted before and after the administration of mercury to dogs, employing all kinds of preparations of that drug, various doses, large and small, and introducing it internally and externally. Permanent biliary fistulae were established in nine dogs, and the amount of bile secreted, before and after mercury was given, carefully noted daily. During the two years over which the investigation extended, not only were the quantities of bile collected compared with the weight of the animal and the amount and nature of its food, but they were in every case analysed, and the proportion of liquid, solid, and inorganic matters ascertained. The whole series of observations present us with the most valuable collection of facts now on record with regard to the functions of the liver. In addition to demonstrating that mercury is not a cholagogue, the Report points out the influence of purgation on the biliary secretion, its relation to consumption of food, to the weight and to the health of the animal, and in what way it is influenced by muscular movements.

6. With a view of exhausting all that had been alleged concerning the influence of drugs on the liver, the Committee investigated, in the same careful way, the action of podophylline and taraxacum; and clearly show that these drugs have not, any more than mercury, the slightest influence as cholagogues.

A well-merited tribute is paid by Dr. Hughes Bennett, the Reporter, to the zeal, endurance, and courage of Drs. Rutherford and Gamage, on whom the labour of performing the experiments and drawing up the tables devolved. Doubtless, the occasional advice and criticisms of Dr. Christison, Dr. MacLagan, and Dr. Fraser were also advantageous. To Dr. Hughes Bennett, however, are we indebted for the original conception and constant surveillance which led to the completion of the work. We are informed that, without his energy, determination, and influence, this laborious inquiry would scarcely have been carried to a successful termination, such were the disappointments, disgust at the kind of work, and frequent failures, and so great was the opposition on the part of some members of the University to the performance of the experiments. The compiling and writing the Report was in itself a great labour.

The thanks of the profession are due to Dr. Bennett and his coadjutors for their labours. The demonstration which they have effected, of the fallacy of the commonly received idea as to the action of mercury on the liver, is likely to be a benefit of no less importance than the abolition of universal blood-letting in acute inflammations—especially in pneumonia.

THERAPEUTIC NOTES.

BY G. H. NAPHEYS, M.D.*

A SOPORIFIC or sedative effect is often desired in clinical practice, in those cases in which a preparation of opium cannot be given, because of an idiosyncrasy or

* From the Medical and Surgical Reporter (Philadelphia.)

some other contra-indication. Below will be found a few formulæ for

Hypnotics and Sedatives other than Opiates.

BROWN-SÉQUARD.

R. Potassii Bromidi, ʒij.
Aque Cinnamon, f.ʒj. M.

Sig. Dessert-spoonful a quarter of an hour before the last meal, and the same dose, or three tea-spoonfuls, repeated at bed-time, for adults. Excepting when pain is one of the causes preventing sleep (in which case the alkaloids of opium, aconite, or hyoscyamus should be employed), Dr. Brown-Séquard has found that this remedy has a most wonderful power to produce a quiet and refreshing sleep, without any drawbacks. In some cases it is necessary to increase the dose of the bromide, and to give also a small dose of narcine or codeine an hour before bed-time. In those affections in which the bromide of potassium is not powerful enough as a sleep-inducing agent, a warm bath of four, five, or six hours' duration is often successful.

Dr. Da Costa has found in reference to the soporific and anodyne properties of narcine, that it appeared, in doses in which morphia is prescribed, totally destitute of either; and in larger doses uncertain, and often palpably inert. It does not allay irritation, (*vide* "Pennsylvania Hospital Reports" for 1868.)

Dr. J. M. DA COSTA.

R. Pulvis Digitalis, gr. 4.
Extracti Hyoscyami,
Camphore, ʒiij gr. j.

For one pill.

To be taken at night.

Dr. EDWARD JOHN TILT.

R. Extracti Hyoscyami, gr. ij.
" Cannabis Indicæ, gr. 4.

For one pill.

One or two to be taken at night, or oftener. But Dr. Tilt gives Indian hemp in one-grain doses, as soon as he finds it agrees, and sometimes in larger doses. If he desires a tonic as well as sedative effect, he orders,

R. Extracti Hyoscyami,
Quinæ Sulphatis, ʒiij gr. j.

For one pill.

To be taken every night. This is a preparation that he has often found to be well borne by women who could not bear large doses of any tonic; some have continued to take it for months, not leaving it off during the menstrual period; and it will not interfere with the action of any purgative that may be required.

Dr. T. H. TANNER.

R. Extracti Stramonii, gr. 4.
" Hyoscyami, gr. iiss.
" Lupuli, gr. iijss.

For one pill.

To be taken every four hours until relief is obtained, in chronic disorders attended with suffering, in diseases of the nervous system accompanied with pain and restlessness, and in the dyspnoea of phthisis and emphysema.

Dr. C. Handfield Jones says that henbane approves itself frequently as a really valuable remedy among sporic drugs. He agrees with Dr. Graves, as to the advantage of using it in the form of enema in many instances; and, as Dupuytren held, the dose need not exceed that which is given by the mouth. Large doses of henbane, as gr. xx. of the extract, may in many cases advantageously replace opium. He gave, for several nights, gr. xxv. to a man on the verge of delirium tremens, and sleepless previously, even with morph. mur., gr. 4.

Dr. Chas. West states that the value of tincture of hyoscyamus as a sedative in the diseases of children can scarcely be too highly estimated. He orders—

R. Tr. Hyoscyami, mʒiij.
Syrupi, f.ʒij.
Aque, f.ʒix. M.

Dessert-spoonful every six hours for a child a year old. To this mixture there may be added, if there is much peevishness,

Potasse Bicarbonatis,
Acidi Citrici, ʒiij gr. xx.

Also, if the stomach be not irritable,

Vini Ipecacuanhæ, mʒij.

Suppository—Dr. J. M. DA COSTA.

R. Assafoetide, gr. x.
Extracti Hyoscyami, gr. iij—v. M.

Fiat suppository.

To be introduced at night to quiet restlessness and induce sleep where it is not desirable to give opiates.

Hypodermic Injection—Dr. RUPPNER.

R. Tr. Hyoscyami, gr. x—xx.

For a single injection.

R. Tr. cannabis indicæ, gr. x—xx.

For one injection.

Dr. Forbes Winslow gives a hint which is worth remembering with regard to the employment of sedatives generally. This is, that cases which are intractable to separate remedies, will yield to a judicious combination of several. This is probably the secret of the success of the nostrum chlorodyne.

MICHAEL FARADAY.

BY DR. H. BENCE JONES, F.R.S.*

Æt. 43 (1835).

The tenth series of Experimental Researches was on an improved form of the Voltaic Battery, some practical results respecting the Construction and Use of the Voltaic Battery.

He gave Friday discourses on Melloni's recent discoveries on Radiant Heat; on the Induction of Electric Currents; on the Manufacture of Pens from Quills and Steel, illustrated by Morden's machinery; on the Condition and Use of the Tympanum of the Ear.

In July he went with Mrs. Faraday from Brighton to Dieppe, spending a week in Paris, and some days at Geneva; he stayed two days at Chamouni. He writes to his friend Magrath:—"We are almost surfeited with magnificent scenery; and for myself I would rather not see it than see it with an exhausted appetite. The weather has been most delightful, and everything in our favour, so that the scenery has been in the most beautiful condition. Mont Blanc, above all, is wonderful, and I could not but feel, what I have often felt before, that painting is very far beneath poetry in cases of high expression, of which this is one. No artist should try to paint Mont Blanc; it is utterly out of his reach. He cannot convey an idea of it, and a formal map, or a common-place model, conveys more intelligence, even with respect to the sublimity of the mountain, than his highest efforts can do; in fact, he must be able to dip his brush in light and darkness before he can paint Mont Blanc. Yet the moment one sees it, Lord Byron's expressions come to mind, and they seem to apply. The poetry and the subject dignify each other."

On the 20th of April Sir James South wrote to him to say that he would have a letter from Sir Robert Peel acquainting him with the fact that, had Sir R. Peel remained in office, a pension would have been given him. On the 23rd he wrote a letter to Sir James South, which, however, his father-in-law prevented him from sending. He said, "I hope you will not think that I am unconscious of the good you meant me, or undervalue your great exertions for me, when I say that I cannot accept a pension whilst I am able to work for

* Continued from page 278.

my living. Do not from this draw any sudden conclusion that my opinions are such and such. I think that Government is right in rewarding and sustaining science. I am willing to think, since such approbation has been intended me, that my humble exertions have been worthy, and I think that scientific men are not wrong in accepting the pensions; but still I may not take a pay which is not for services performed whilst I am able to live by my labours."

In the *Times* of Saturday, 25th Oct., 1835, under the head of Tory and Whig Patronage to Science and Literature, is the following conversation, copied from "Fraser's Magazine":—

"Mr. F.—I am here, my Lord, by your desire; am I to understand that it is on the business which I have partially discussed with Mr. Young? (Lord M.'s Secretary.) Lord Melbourne.—You mean the pension, don't you. Mr. F.—Yes, my Lord. Lord M.—Yes, you mean the pension, and I mean the pension too. I hate the name of the pension. I look upon the whole system of giving pensions to literary and scientific persons as a piece of gross humbug; it was not done for any good purpose, and never ought to have been done. It is a gross humbug from beginning to end. Mr. F. (rising, and making a bow).—After all this, my Lord, I perceive that my business with your Lordship is ended. I wish you a good morning." Faraday said that the report of this conversation was full of error; however he wrote:—

"To the Right Hon. Lord Viscount Melbourne, First Lord of the Treasury.

"October 26.

"My Lord,—The conversation with which your Lordship honoured me this afternoon, including, as it did, your Lordship's opinion of the general character of the pensions given of late to scientific persons, induces me respectfully to decline the favour which I believe your Lordship intends for me; for I feel that I could not, with satisfaction to myself, accept at your Lordship's hands that which, though it has the form of approbation, is of the character which your Lordship so pithily applied to it."

This note, Mr. F. says, "was left by myself, with my card, at Lord Melbourne's office on the same evening, i. e., of the day of our conversation."

On the 6th of November Faraday wrote to Sir James South:—

"And now, my dear Sir, pray let me drop I know you have serious troubles of your own. Do not let me be one any longer either to you or to others. You have my most grateful feelings for all the kindness you have shown to him who is ever truly yours."

The intervention of Miss Fox and Lady Mary Fox caused Lord Melbourne to write the following letter:—

"November 24.

"Sir,—It was with much concern that I received your letter declining the offer which I considered myself to have made in the interview which I had with you in Downing-street, and it was with still greater pain that I collected from that letter that your determination was founded upon the certainly imperfect, and perhaps too blunt and inconsiderate manner in which I had expressed myself in our conversation. I am not unwilling to admit that anything in the nature of censure upon any party ought to have been abstained from upon such an occasion; but I can assure you that my observations were intended only to guard myself against the imputation of having any political advantage in view, and not in any respect to apply to the conduct of those who had or hereafter might avail themselves of a similar offer. I intended to convey that, although I did not entirely approve of the motives which appeared to me to have dictated some recent grants, yet that your scientific character was so eminent and unquestionable as entirely to do away any objection which I might otherwise have felt, and to render it impossible that a distinction so bestowed could be ascribed to any other motive than the desire to reward acknowledged desert and to advance the interest of philosophy.

"I cannot help entertaining a hope that this explanation may be sufficient to remove any unpleasant or unfavourable impression which may have been left upon your mind, and that I shall have the satisfaction of receiving your consent to my advising His Majesty to grant to you a pension

equal in amount to that which has been conferred upon Professor Airy and other persons of distinction in science and literature."

The same day Faraday wrote:—"My Lord, your Lordship's letter, which I have just had the honour to receive, has occasioned me both pain and pleasure—pain, because I should have been the cause of your Lordship's writing such a one, and pleasure, because it assures me that I am not unworthy of your Lordship's regard.

"As, then, your Lordship feels that, by conferring on me the mark of approbation hinted at in your letter, you will be at once discharging your duty as First Minister of the Crown, and performing an act consonant with your own kind feelings, I hesitate not to say I shall receive your Lordship's offer both with pleasure and with pride."

The pension was granted December 24, but in the interval he was much troubled by some, who thought that a contradiction to the injurious statement in the *Times* against Lord Melbourne ought to be made.

Faraday writes:—"The pension is a matter of indifference to me, but other results, some of which have already come to pass, are not so. The continued renewal of this affair, to my mind, tempts me at times to what might be thought very ungenerous under the circumstances, namely, even at this late hour, a determined refusal of the whole."

On the 8th of December he, however, published a letter in the *Times*, in which he says, "I beg leave thus publicly to state that neither directly nor indirectly did I communicate to the Editor of 'Fraser's Magazine' the information on which that article (an extract of which was published in the *Times* of the 28th) was founded, or further, either directly or indirectly, any information to or for any publication whatsoever."

This year he was made Corresponding Member of the Royal Academy of Medicine, Paris; Hon. Member of the Royal Society of Edinburgh, Institution of British Architects, and Physical Society of Frankfurt; Hon. Fellow of the Medico-Chirurgical Society of London; and he was awarded one of the Royal Medals by the Royal Society.

Æt. 44 (1836).

This year the whole course of Faraday's scientific work was changed by his appointment as Adviser to the Trinity House. He published one paper in the *Philosophical Magazine* on the general Magnetic Relations and Characters of the Metals, which he begins by saying, "general views have long since led me to an opinion, which is probably also entertained by others, though I do not remember to have met with it, that all the metals are magnetic in the same manner as iron."

He gave four Friday discourses on Silicified Plants and Fossils; on Magnetism of Metals as a general character; on Plumbago, and on Pencils, Morden's Machinery; and considerations respecting the nature of Chemical Elements.

The 3rd of February he wrote to Capt. Pelly, Deputy Master of the Trinity House:—

"I consider your letter to me as a great compliment, and should view the appointment at the Trinity House, which you propose, in the same light; but I may not accept even honours without due consideration.

"In the first place, my time is of great value to me, and if the appointment you speak of involved anything like periodical routine attendances, I do not think I could accept it. But if it meant that in consultation, in the examination of proposed plans and experiments, in trials, &c., made as my convenience would allow, and with an honest sense of a duty to be performed, then I think it would consist with my present engagements. You have left the title and the sum in pencil. These I look at mainly as regards the character of the appointment; you will believe me to be sincere in this, when you remember my indifference to your proposition as a matter of interest, though not as a matter of kindness.

"In consequence of the goodwill and confidence of all around me, I can at any moment convert my time into money, but I do not require more of the latter than is sufficient for necessary purposes. The sum, therefore, of £200 is quite enough in itself, but not if it is to be the indicator of the character of the appointment; but I think you do not view it so, and that you and I understand each other in that respect; and your letter confirms me in that

opinion. The position which I presume you would wish me to hold is analogous to that of a standing counsel.

"As to the title, it might be what you pleased almost. Chemical adviser is too narrow; for you would find me venturing into parts of the philosophy of light not chemical. Scientific adviser you may think too broad (or in me too presumptuous); and so it would be, if by it was understood all science. It was the character I held with two other persons at the Admiralty Board in its former constitution.

"The thought occurs to me whether, after all, you want such a person as myself. This you must judge of; but I always entertain a fear of taking an office in which I may be of no use to those who engage me. Your applications are, however, so practical, and often so chemical, that I have no great doubt in the matter."

On the 4th he was made Scientific Adviser in experiments on lights to the Corporation.

For thirty years nearly he held this post. What he did may be seen in the portfolios full of manuscripts which Mrs. Faraday has given to the Trinity House, in which, by the marvellous order and method of his notes and indices, each particle of his work can be found and consulted immediately.

His first work was to make a photometer. Throughout the whole year he was busy on the subject, making three photometers, and ascertaining the capability and accuracy of the instruments. He also experimented on the preparation of oxygen for the Bude light, drawing up the most exact tables for the record of the manufacture; for example, the 10th of November he says, "hence oxygen costs very nearly twopence per cubical foot; exactly 1.909 pence."

He was made Senator of the University of London; Hon. Member of the Society of Pharmacy of Lisbon and of the Sussex Royal Institution; Foreign Member of the Society of Sciences of Modena, and the Natural History Society of Basle.

EL. 45 (1837).

This year the "Eleventh Series of Experimental Researches in Electricity" was communicated to the Royal Society. It was on induction: Induction an action of contiguous particles; absolute charge of Matter; Electrometer and Inductive Apparatus employed; Induction in Curved Lines; Specific Inductive Capacity; general results as to Induction.

His work for the Trinity House consisted in examining the Trinity lamp, the French lamp, and the Bude lamp, as to intensity of light and price; "pressed Mr. Gurney, by letter, to give us his best lamp at once, and not to lose time." Two of his four Friday discourses were on the views of Professor Mosotti as to one general law accounting for the different Forces in Matter; on Dr. Marshall Hall's views of the Nervous System.

He was elected Honorary Member of the Literary and Scientific Institution Liverpool.

EL. 46 (1838).

The twelfth series of Researches was published this year.

—On Induction (continued): Conduction or Conductive Discharge; Electrolytic Discharge; Disruptive Discharge; Insulation, Spark, Brush, Difference of Discharge at the positive and negative surfaces of conductors. The thirteenth series was also on Induction (continued): Disruptive Discharge (continued), peculiarities of positive and negative discharge either as spark or brush; Glow Discharge; Dark Discharge; Convection or Carrying Discharge; Relation of a vacuum to Electrical Phenomena; Nature of the Electrical Current. The fourteenth series was on the nature of the Electric Force or Forces; Relation of the Electric and Magnetic Forces, and notes on Electrical Excitation. The fifteenth series was a notice of the character and direction of the Electric Force of the Gymnotus.

For the Trinity House he a second time reported on the new Gurney lamp, comparing it in light and cost with the French lamp.

He gave four Friday discourses this year.

He was made Honorary Member of the Institution of Civil Engineers; Foreign Member of the Royal Academy of Sciences, Stockholm; and he received the Copley Medal.

EL. 47 (1839).

At the end of July he was four days at Orfordness for the

Trinity House, measuring and comparing at sea and on land the Argand lamp, the French lamp, and the Bude lamp.

He gave four Friday discourses, two of which were on the Electric powers of the Gymnotus and Silurus. An account of Gurney's oxy-oil-lamp.

During thirteen years, Miss Reid, a niece of Mrs. Faraday's, had lived at the Institution, and she has thus given her recollections of Mr. Faraday during these and the following six years:—

"There could be very few regular lessons at the Institution; there were so many breaks and interruptions. Sometimes my uncle would give me a few sums to do, and he always tried to make me understand the why and wherefore of everything I did. Then occasionally he gave me a reading-lesson. How patient he was, and how often he went over and over the same passage when I was unusually dense. He had himself taken lessons from Smar, and he used to practise reading with exaggerated emphasis occasionally.

"In the earlier days of the juvenile lectures he used to encourage me to tell him everything that struck me, and where my difficulties lay when I did not understand him fully. In the next lecture he would enlarge on those special points, and he would tell me my remarks had helped him to make things clear to the young ones. He never mortified me by wondering at my ignorance, never seemed to think how stupid I was. I might begin at the very beginning again and again; his patience and kindness were unailing.

"A visit to the laboratory used to be a treat when the busy time of the day was over.

"We often found him hard at work on experiments connected with his researches, his apron full of holes. If very busy he would merely give a nod, and aunt would sit down quietly with me in the distance, till presently he would make a note on his slate and turn round to us for a talk, or perhaps he would agree to come upstairs to finish the evening with a game, at bagatelle, stipulating for half an hour's quiet work first to finish his experiment. He was fond of all ingenious games, and he always excelled in them. For a time he took up the Chinese puzzle, and, after making all the figures in the book, he set to work and produced a new set of figures of his own, neatly drawn, and perfectly accurate in their proportions, which those in the book were not. Another time, when he had been unwell, he amused himself with *Pappus-problems*, and with his dexterous fingers made a chest of drawers and pigeon-house, &c.

"When dull and dispirited, as sometimes he was to an extreme degree, my aunt used to carry him off to Brighton, or somewhere, for a few days, and they generally came back refreshed and invigorated. Once they had very wet weather in some out of the way place, and there was a want of amusement, so he ruled a sheet of paper and made a neat draught-board, on which they played games with pink and white lozenges for draughts. But my aunt used to give up almost all the games in turn, as he soon became the better player, and, as she said, there was no fun in being always beaten. At bagatelle, however, she kept the supremacy, and it was long a favourite, on account of its being a cheerful game, requiring a little moving about.

"Often of an evening they would go to the Zoological Gardens, and find interest in all the animals, especially the new arrivals, though he was always much diverted by the tricks of the monkeys. We have seen him laugh till the tears ran down his cheek, as he watched them. He never missed seeing the wonderful sights of the day—acrobats and tumblers, giants and dwarfs; even Punch and Judy was an unfailing source of delight, whenever he looked at the performance or at the admiring, gaping crowd.

"He was very sensitive to smells; he thoroughly enjoyed a cabbage rose, and his friends knew that one was sure to be a welcome gift. Fure Eau de Cologne he liked very much; it was one of the few luxuries of the kind that he indulged in; musk was his abhorrence, and the use of that scent by his acquaintance annoyed him even more than the smell of tobacco, which was sufficiently disagreeable to him. The fumes from a candle or oil-lamp going out would make him very angry. On returning home one evening, he found his rooms full of the odious smell from an expiring lamp; he rushed to the window, flung it up hastily, and brought down a whole row of hyacinth-bulbs and flowers and glasses

"Mr. Magrath used to come regularly to the morning lectures, for the sole purpose of noting down for Mr. F. any faults of delivery or defective pronunciation he could detect. The list was always received with thanks; although his corrections were not uniformly adopted, he was encouraged to continue his remarks with perfect freedom. In early days he always lectured with a card before him with 'Slow' written upon it in distinct characters. Sometimes he would overlook it and become too rapid; in this case Anderson had orders to place the card before him. Sometimes he had the word 'Time' on a card brought forward when the hour was nearly expired."

Æt. 48 (1840).

Early in this year the sixteenth series of Experimental Researches appeared. It was on the Source of Power in the Voltaic Pile:—1. Exciting electrolytes, &c., being conductors of thermo and feeble currents; 2. Inactive Conducting Circles containing an electrolytic fluid; 3. Active Circles excited by solution of Sulphuret of Potassium. The seventeenth series came a few days after. Also on the Source of Power in the Voltaic Pile (continued): 4. The exciting Chemical Force by temperature; 5. The exciting Chemical Force affected by dilution; 6. Differences in the Order of the Metallic Elements of Voltaic Circles; 7. Active Voltaic Circles and Batteries without metallic contact; 8. Considerations of the sufficiency of chemical action; 9. Thermoelectric evidence; 10. Improbable nature of the assumed Contact Force.

He gave three Friday discourses.

The previous year, Dr. Hare, Professor of Chemistry in the University of Pennsylvania, wrote his objections to Faraday's theoretical opinions on Static Induction. At the end of Faraday's reply, he says:—"The paragraphs which remain unanswered refer, I think, only to differences of opinion, or else not even to differences, but opinions regarding which I have not ventured to judge. These opinions I esteem of the utmost importance; but that is a reason which makes me the rather desirous to decline entering upon their consideration, inasmuch as on many of their connected points I have formed no decided notion, but am constrained by ignorance and the contrast of facts to hold my judgment as yet in suspense. It is indeed to me an annoying matter to find how many subjects there are in electrical science on which, if I were asked for an opinion, I should have to say I cannot tell—I do not know; but, on the other hand, it is encouraging to think that these are they which, if pursued industriously, experimentally, and thoughtfully, will lead to new discoveries. Such a subject, for instance, occurs in the currents produced by dynamic induction, which you say it will be admitted do not require for their production intervening ponderable atoms. For my own part, I more than half incline to think they do require these intervening particles. But on this question, as on many others, I have not yet made up my mind."

On the 1st of January the following year, Dr. Hare sent a reply. In Faraday's answer to this, he says:—"You must excuse me, however, for several reasons, from answering it at any length. The first is my distaste for controversy, which is so great that I would on no account our correspondence should acquire that character. I have often seen it do great harm, and yet remember few cases in natural knowledge where it has helped much either to pull down error or advance truth. Criticism, on the other hand, is of much value; and when criticism such as yours has done its duty, then it is for other minds than those either of the author or critic to decide upon and acknowledge the right."

This year he reported to the Trinity House on the necessity and method of examining lighthouse dioptric arrangements, and he had to examine the apparatus intended for Gibraltar. Between Purfleet and Blackwall he made a long comparison between English and French reflecting lamps and between English and French refracting prisms.

To Professor Auguste De la Rive, the son of his early friend, he wrote:—

"Though a miserable correspondent, I take up my pen to write to you, the moving feeling being a desire to congratulate you on your discernment, perseverance, faithfulness, and success in the cause of Chemical Excitement of the current in the Voltaic Battery. You will think it is rather late to do so;

but not under the circumstances. For a long time I had not made up my mind; then the facts of definite electrochemical action made me take part with the supporters of the chemical theory, and since then Marianini's paper with reference to myself has made me read and experiment more generally on the point in question. In the reading, I was struck to see how soon, clearly, and constantly you had and have supported that theory, and think your proofs and reasons most excellent and convincing. The constancy of Marianini and of many others on the opposite side made me, however, think it not unnecessary to accumulate and record evidence of the truth, and I have therefore written two papers, which I shall send you when printed, in which I enter under your banners as regards the origin of electricity or of the current in the pile. My object in experimenting was, as I am sure yours has always been, not so much to support a given theory as to learn the natural truth; and having gone to the question unbiassed by any prejudices, I cannot imagine how anyone whose mind is not preoccupied by a theory, or a strong bearing to a theory, can take part with that of contact against that of chemical action. However, I am perhaps wrong saying so much, for, as no one is infallible, and as the experience of past times may teach us to doubt a theory which seems to be most unchangeably established, so we cannot say what the future may bring forth in regard to these views."

He was made Member of the American Philosophical Society, Philadelphia, and Honorary Member of the Hunterian Medical Society, Edinburgh.

He was in the autumn of this year ordained Elder in the Sandemanian Church, and he held the office three years and a-half.

Æt. 49 (1841).

On the 2nd of September Faraday went down to St. Catherine's lighthouse in the Isle of Wight, to remedy the condensation of moisture on the glass in the inside. On the 6th he returned home, "quite satisfied with the chimney, and have no doubt we shall have a lantern quite clear from sweat, and also much cleaner, both as to the mirrors and roof, from soot and blackness, than heretofore."

The 30th of June he left London for three months, with Mrs. Faraday and Mr. and Mrs. George Barnard, for Ostend and Switzerland. The journal which he kept contains many most beautiful descriptions. That of Brienz Lake and the Giessbach is perhaps one of the most striking:—"George and I crossed the lake in a boat to Giessbach, he to draw and I to saunter. The day was fine, but the wind against the boat; and these boats are so cumbersome, and at the same time expose so much surface to the air, that we were about two hours doing the two miles, with two men and occasionally our own assistance at the oar. We broke the oar-band; we were blown back and sideways. We were drawn against the vertical rock, in a place where the lake is nearly 1,000 feet deep; and I might tell a true tale, which would sound very serious, yet after all there was nothing of any consequence but delay. But such is the fallacy of description. We reached the fall, and found it in its grandeur; for, as much rain fell last night, there was perhaps half as much more water than yesterday. This most beautiful fall consists of a fine river, which passes by successive steps down a very deep precipice into the lake. In some of these steps there is a clear leap of water 100 feet, or more; in others, most beautiful combinations of leap, cataract, and rapid—the finest rocks occurring at the sides and bed of the torrent. In one part a bridge passes over it; in another a cavern and path occur under it. To-day every fall was foaming from the abundance of water, and the current of wind brought down by it was in some parts almost too strong to stand against. The sun shone brightly, and the rainbows seen from various parts were very beautiful. One at the bottom of a fine but furious fall was very pleasant; there it remained motionless, whilst the gusts and clouds of spray swept furiously across its place, and were dashed against the rock. It looked like a spirit strong in faith and steadfast in the midst of the storm of passions sweeping across it; and though it might fade and revive, still it held on to the rock as in hope and giving hope, and the very drops which, in the whirlwind of their fury, seemed as if they would carry all away, were made to revive it and give it greater beauty. How often are the things we fear and

esteem as troubles made to become blessings to those who are led to receive them with humility and patience! In one part of the fall the effect of the current of air was very curious. The great mass of water fell into a foaming basin, but some diverted portions struck the rock opposite the observer, and, collecting, left it at the various projecting parts; but, instead of descending, these hundred little streams rushed upwards into the air, as if urged by a force the reverse of gravity; and as there was little other spray in this part, it did not at first occur to the mind that this must be the effect of a powerful current of air, which, having been brought down by the water, was returning up that face of the rock."

Into the pages of this journal he has fixed, with the most extreme neatness, the different mountain-flowers that he gathered in his walks.

Mrs. Faraday wrote for him part of a letter to Mr. Magrath:—"I think Mr. Young would be quite satisfied with the way my husband employs his time. He certainly enjoys the country exceedingly; and though at first he lamented our absence from home and friends very much, he seems now to be reconciled to it as a means of improving his general health. His strength is, however, very good. He thinks nothing of walking thirty miles in a day, and one day he walked forty-five, which I protested against his doing again, though he was very little the worse for it. I think that is too much. What would Mr. Young say to that? but the grand thing is rest and relaxation of mind, which he is really taking." He finishes the letter himself:—"Though my wife's letter will tell you pretty well all about us, yet a few lines from an old friend (though somewhat worn out) will not be unpleasant to one who, like that friend, is a little the worse for time and hard wear. However, if you jog on as well as we do, you will have no cause for grumbling, by which I mean to say that I certainly have not; for the comforts that are given to me, and above all, the continued kindness, affection, and forbearance of friends towards me, are, I think, such as few experience. . . . Remember me most kindly to Mr. Young. I will give no opinion at present as to the effect of his advice on my health and memory; but I can have only one feeling as to his kindness, and, whatever I may forget, I think I shall not forget that. . . . Now, as to the main point of this trip, *i.e.*, the mental idleness, you can scarcely imagine how well I take to it, and what a luxury it is. The only fear I have is that when I return friends will begin to think that I shall overshoot the mark; for feeling that any such exertion is a strain upon that faculty, which I cannot hide from myself is getting weaker, namely, memory, and feeling that the less exertion I make to use that the better I am in health and head, so my desire is to remain indolent, mentally speaking, and to retreat from a position which should only be held by one who has the power as well as the will to be active. All this, however, may be left to clear itself up as the time proceeds."



POOLEY'S TOBACCO POWDER.

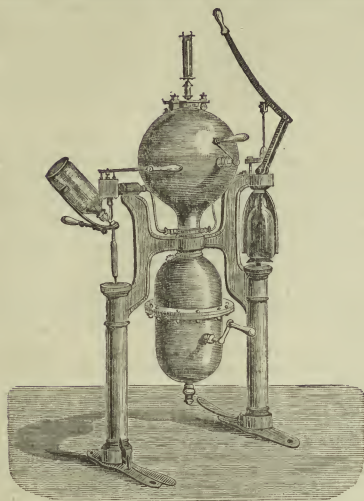
The application of tobacco to horticultural and agricultural purposes has long occupied the attention of Mr. T. A. Pooley, and since the Board of Customs have granted him permission to use, under certain conditions, duty-free American tobacco for his blight-destroying preparations, the virtues of the "noxious weed" have been extensively tested by hop-growers, pomologists, and florists. The Tobacco Powder prepared by Mr. Pooley is said to destroy every kind of insect infesting plants, among which may be specially named the green fly, black fly, thrips, and red spider. It is said to be useful also for exterminating ants, slugs, caterpillars, and earwigs, and for killing fleas on domestic animals. Being an exceedingly fine powder, it

may be readily applied to the plants attacked by the aid of a suitable distributor or a fine muslin bag. The plants should be damp when they are dusted, and tender plants should be syringed about six hours after the operation. By occasionally raising a light cloud of this powder in a conservatory, blight is said to be effectually prevented; for although the powder may not be perceptible on the plants, enough will have lodged upon them to keep away insects. The TOBACCO POWDER DISTRIBUTOR is a short elastic flask of vulcanised caoutchouc, provided with a brass nozzle, in which several holes are pierced. In an important article on Insects contributed to the *Journal of Horticulture*, Mr. G. Abbey writes:—"The green aphid on peach, plum, and other fruit trees, on roses, and all kinds of trees, shrubs, and plants in the open air, is best overcome by dusting them with tobacco powder; and now that we have preparations of tobacco duty free, the expense is not a serious obstacle. Tobacco has long been known to horticulturists as a powerful agent in the destruction of insect life, but the heavy duty on that of foreign or colonial growth, and the almost total prohibition of growing it in this country, prevented horticulturists from using it extensively, although the best, safest, and most easily applicable remedy for insect enemies. In applying tobacco powder in the open air, the tree, shrub, or other plant should be lightly sprinkled with enough water to make it wet, and the parts affected with aphid should be dusted with the tobacco powder by means of a distributor, which is made of india rubber in the form of a wine decanter or water bottle, only smaller, and having a broad bottom, on which it stands well. It has a moveable brass nozzle, or jet, with seven holes in it, answering to the stopper of the water bottle. The way to use the distributor is to fill the india rubber flask about half full of the powder, using a tin funnel to prevent waste, then to replace the jet or nozzle, and on pressing the flask the powder will be forced out through the holes in a cloud of dust, which may be directed against the parts infested, and particularly the undersides of the leaves. The tobacco powder will destroy all the fly it touches, and does not injure the plant. A calm day is best for dusting plants, for the wind does not blow away or divert the course of the powder, and the plants damped remain longer moist. The operation should be performed in the evening or late in the afternoon. It is not necessary for the destruction of green fly to have the plants wet, only the powder adheres better; and acting to some extent as a decoction, its effects are extended to parts not easily reached by dusting, and any danger of injury to the plant is lessened. Although the powder is not injurious to the foliage when put on whilst dry, yet when it is so applied it is well to give within six hours afterwards a slight wetting with water from a syringe. In forty-eight hours the trees or plants should have a good syringing, so as to thoroughly clean the foliage. The powder is as applicable to plants indoors as in the open air, only for plants and fruit trees under glass I consider fumigation more cleanly; but there are instances where fumigation cannot be practised, then dusting with tobacco powder will be an effectual means of freeing the plants of insects of the aphid family. The tobacco powder and distributor here referred to, and which I employ for freeing plants of green fly, are those of Mr. Pooley."

The other preparations of tobacco introduced by Mr. Pooley are also highly commended by practical horticulturists. The TOBACCO GRAINS, for fumigating plants, when once lighted, continue to burn without attention. The TOBACCO SOAP is a preparation which dissolves readily in water, forming a solution which may be used for washing plants or animals infested with insects.

GERAUT'S NEW SODA-WATER MACHINE.

THE exhaustive articles on Soda-water Machinery lately published in this journal, and the clearness of the engraving



above, render our task of description of this machine extremely light. The carbonic acid gas is generated by the usual process in the lower vessel, which is thickly lined with lead, and the gas passing thence through a purifying tube to the top of the apparatus, is admitted by means of a valve into the large upper globe, which is nearly filled with water, the force of gas being distinctly indicated by the manometer above. Agitation by the winch only is required to complete the process of saturation, and the soda or other aerated waters are then ready to be drawn off. The machine takes up but little space, and all its parts are constructed with the utmost solidity. As will be seen from the sketch, it is adapted on one side to fill syphons, and on the other side for filling ordinary soda-water or champagne bottles. In the second case, an ingenious arrangement for corking the bottles is also fixed, by the adoption of which, and with a few dexterous moves of the hand and foot, bottling and corking is accomplished with great rapidity, a second person being at hand to finish, by fixing the wires. Respecting syphons in the soda-water trade, we shall perhaps have a word or two to say next month.

BAILEY'S ROOT-CUTTING MACHINE.

MESSES. BAILEY AND SON, of Salford, seemed determined to smooth the road of future pharmacy by the production of machinery calculated to lighten the labours of the druggist. The above is their latest novelty. We have a drawing of the apparatus before us, but there is no time to engrave it before we go to press, and we must therefore trust to the intelligence of our readers in comprehending our description. The machine is similar in appearance to Bushby's pill machine, and is worked by a fly-wheel in the same manner; only, in place of the revolving grooved cylinder of the latter,

we have the constant fall of a broad knife somewhat like a miniature guillotine. We are not informed, though we presume such is the case, whether the roots to be cut, and which lie on the table of the machine behind the knife, are mechanically brought forward as the pill mass is in the other apparatus.

SHILLCOCK'S PATENT SAFETY BOTTLE.



We need not say that the object of this invention is to guard against accidental poisoning, through the careless administration of the wrong medicines. A brass ring, with two protruding points, is fixed round the neck of the bottle, and to these points an elastic band is attached, which passes over the cork or stopper. The appearance is neat, and we can say no more. Personally, we entertain a deep-seated distrust of all such appliances, though we know our opinion is not shared by all dispensers. Mr. Shillcock's bottle is just as likely to prevent accidental poisoning as any of the remaining thousand and one inventions which have been offered for the same purpose; but we are inclined to think a very small share of intelligence dispersed among nurses and patients would have a still greater effect.



BOOKS FOR CHEMICAL STUDENTS.

History of Chemical Theory, from the Age of Lavoisier to the Present Time. By AD. WURTZ, Membre de l'Institut (Académie des Sciences). Translated and edited by HENRY WATTS, B.A., F.R.S. London: Macmillan and Co.

A Manual of Elementary Chemistry, Theoretical and Practical. By GEORGE FOWNS, F.R.S., late Professor of Practical Chemistry in University College, London. Tenth Edition, revised and corrected. London: John Churchill and Sons.

Lessons in Elementary Chemistry: Inorganic and Organic. By HENRY E. ROSCOE, B.A., F.R.S., late Professor of Chemistry in Owens College, Manchester. New Edition. London: Macmillan and Co.

Chemistry for Students. By ALEXANDER W. WILLIAMSON, F.R.S., F.C.S., etc., Professor of Chemistry in University College, London; Examiner in Chemistry at the University of London. New Edition. Oxford: Clarendon Press.

An Introduction to Scientific Chemistry; designed for the Use of Schools and for Candidates for University Matriculation Examinations. By F. S. BARFF, M.A., Ch. Coll., Cambridge; Assistant to Dr. Williamson, Professor of Chemistry, University Coll., London. London: Groombridge and Sons.

Laboratory Teaching; or, Progressive Exercises in Practical Chemistry. By C. L. BLOXAM, Professor of Practical Chemistry, King's College, London; Professor of Chemistry in the Department of Artillery Studies, Woolwich; etc. London: Churchill and Sons.

We remind chemical students commencing the summer course that the above important works are now offered for their selection. We hoped to have given a general review of these books in the present number, and with this intention we obtained from the different publishers many admirable specimens of the illustrations. Unfortunately, however, owing to the blocks arriving late, and to the unavoidable extension of our review, we cannot possibly do

justice to the merits of these; new issues this month, without excluding much matter of great, though temporary, interest. We will in our next so arrange the space at our disposal that our readers may obtain an illustrated commentary on these volumes, each of which we can commend in the warmest terms.

We have to acknowledge the following:—

Pocket Guide to the British Pharmacopoeia (Hardwicke).

British Medical Journal, Journal of Society of Arts, Pharmaceutical Journal, Monthly Homoeopathic Review, Chemical News, Grocer, Produce Markets Review.

Scientific American (New York), *Medical and Surgical Reporter* (Philadelphia), *Pharmacist* (Chicago), *Tilden's Journal* (New York), *Trade Review* (Montreal), *New York Druggists' Circular, New York Druggists' Price Current, Canadian Pharmaceutical Journal, Pacific Medical Journal* (San Francisco).

Corner for Students.

CONDUCTED BY J. C. BROUGH, F.R.S.

The chemical formulae employed in this section are based upon the new system of atomic weights, unless the use of the older system is specially indicated. In the *British Pharmacopoeia* the symbols corresponding to those adopted here are printed in heavy Clarendon type. The chemical nomenclature generally used in this Corner for Students agrees with that adopted in the new edition of *Poore's Manual of Chemistry*, which is recommended as a text-book.

QUESTIONS.

I. COMMERCIAL ANALYSIS.—A sample of crude alkali contains sodium carbonate and sodium hydrate. How may the proportions of the two constituents be determined?

II. SPECIFIC GRAVITY.—A stone weighing 50 grains has the sp. gr. 4.9; acids remove 30 grains of a metal, leaving a substance of sp. gr. 3.2. Required the sp. gr. of the metal.

III. HYDROMETER.—Explain in precise language, and as briefly as possible, the principle of this instrument.

IV. QUALITATIVE ANALYSIS.—Name the metals which may be precipitated as chlorides, from neutral or acid solutions, by hydrochloric acid, and state how the precipitated chlorides may be distinguished one from another.

V. PLUMBI NITRAS, B.P.—Give the names and formulae of the precipitates noticed in connection with the tests for this salt.

VI. ACIDUM TARTARICUM, B.P.—Explain the chemistry of the process for preparing this acid.

VII. HYDROGEN.—What is the weight in grains of a cubic yard of this gas at 50° Fah., and 28 inches barometric pressure?

VIII. OXYGEN.—What volume of oxygen in litres, at 12° C. and 770 mm., can be obtained from a kilogramme of manganese dioxide by the action of a red heat?

IX. GASES.—Four bottles containing oxygen, hydrogen, nitrogen, and chlorine respectively, are given to you to examine; how would you distinguish each of these gases from the others?

X. PHOSPHORUS.—Represent by a symbolic equation the reaction which takes place when phosphorus is heated in a solution of barium hydrate.

ANSWERS.

[See Questions in April number, page 282.]

I. CHLORINE.—Chlorine destroys the blue colour of indigo solution (sulphindigotic acid), forming, by indirect oxidation and substitution, several compounds which are brown, yellow, or colourless. Copper foil introduced into dry chlorine takes fire spontaneously, and burns with a greenish light, producing a mixture of cupric and cuprous chlorides. Powdered antimony thrown into chlorine also takes fire, the product of the combustion being the trichloride or pentachloride, according as the antimony or the chlorine is in excess. On powdered charcoal chlorine has no action. Phosphorus and chlorine unite directly with combustion, the product being the trichloride or pentachloride, according to the proportions of the two elements. Sulphur at an elevated temperature unites directly with chlorine, forming sulphur monochloride, SCl or S_2Cl_2 .

II. VINEGAR.—If sulphuric acid be present, solution of barium chloride, nitrate, or acetate, will precipitate barium sulphate, which is insoluble in hydrochloric acid. The addition of one part of sulphuric acid to 1,000 parts of vinegar is permitted by an Excise regulation. Lead acetate may be substituted for the barium salt as a test.

III. LIQ. AMMONIÆ FORTIOR, B.P.—The volumetric test shows that 52.3 grains of this solution correspond to 17 grains of ammonia ($\text{NH}_3 = 17$). Then since the sp. gr. of the solution is 0.891, the weight of 1 fluid drachm is $54.68 \times 0.891 = 48.72$ grains. We therefore find the weight of ammonia in one fluid drachm by the following proportion:

$$52.3 : 48.72 = 17 : x ; \therefore x = 15.83$$

This result agrees with the Pharmacopoeia statement. The lime water test is for carbonates, which, if present, would give a precipitate of calcium carbonate; the ammonium oxalate test is for calcium salts, which would give a precipitate of calcium oxalate; the ammonium sulphide test is for the salts of such metals as copper, lead, and iron, which would give insoluble sulphides; the ammoniated cupric sulphate test is for arsenious compounds, which would give a green precipitate of copper arsenic; the silver nitrate test, with nitric acid in excess, is for chlorides, which would give a precipitate of silver chloride; the barium chloride test is for sulphates, which would give a precipitate of barium sulphate.

IV. ARGENTI OXIDUM, B.P.—The product of the prescribed process would yield 0.4935 litres of oxygen at 12° C. and 760 mm.

The quantity of silver oxide obtainable from 340 grammes of silver nitrate ($2\text{AgNO}_3 = 340$) corresponds to 11.19 litres of oxygen at the standard temperature and pressure, for if the molecular weight of Ag_2O be expressed in grammes, O will represent 16 grammes or 11.19 litres. Now the quantity of silver nitrate in the prescribed process is half an ounce, or 14.17475 grammes, consequently the volume of oxygen evolved on the decomposition of the oxide produced may be found by the proportion:

$$340 : 14.17475 = 11.19 : x ; \\ . \therefore x = 0.4665 \text{ litres at } 0^\circ \text{C and } 760 \text{ mm.}$$

To correct this volume for the temperature of 12° C., we have the proportion:

$$273 : 273 + 12 = 0.4665 : x ; \therefore x = 0.487$$

To correct this increased volume for the pressure of 760 mm., we have the proportion:

$$760 : 760 = 0.487 : x ; \therefore x = 0.4935.$$

V. ARGENTI NITRAS.—The nitric acid required weighs 5.253 grammes. This quantity is exclusive of the excess which is decomposed into gaseous oxides. The weight of the silver left obviously is the weight contained in the 11.17475 grammes of nitrate ordered in the process for Argenti Oxidum. Then, as one molecule of nitric acid ($\text{HNO}_3 = 63$) is required to form one molecule of silver nitrate ($\text{AgNO}_3 = 170$), we have the proportion:

$$170 : 11.17475 = 63 : x ; \therefore x = 5.253.$$

VI. STANDARD GAS VOLUME.—The side of the cube, which is equal in volume to 11.19 litres, measures 223.671 millimetres.

The 11.19 litres correspond to 119,000 cubic millimetres, and the cube root of the latter number is 223.671.

VII. SPECIFIC GRAVITY.—The proportion of lead to tin in the alloy is as 23 to 37, the weights of the samples of the separate metals. The weight of the alloy in air and in water is just double the weight of the samples together; consequently, the proportion of lead to tin in the alloy is as 23 to 37.

VIII. DOUBLE DECOMPOSITION.—The weight of the precipitate would be 390.565 grains. The molecular weight of barium nitrate is 261; that of sodium sulphate, 142. As equal weights of the two salts are used, the sodium sulphate will evidently be in excess. Then, as 233 grains of barium sulphate may be obtained from 261 grains of the nitrate, the following proportion will give the weight from one ounce or 437.5 grains:

$$261 : 437.5 = 233 : x ; \therefore x = 390.565.$$

IX. HYDRARGYRI IODIDUM RUBRUM.—This compound may be formed by rubbing in a mortar, with a little alcohol, 100 parts of mercury and 127 parts of iodine, until a uniform red powder is obtained.

X. SPECIFIC GRAVITY OF PHOSPHORUS.—The weight of the piece of phosphorus is 111.487 grains. The specific gravity of phosphorus being 1.77, a piece weighing 0.77 grains in water will weigh 1.77 grains in air. The weight in air of a piece which weighs 48.5 grains is therefore found by the proportion :

$$0.77 : 48.5 = 1.77 : x ; \therefore x = 111.487.$$

PRIZES.

The First Prize for Solutions of Problems in our April number is awarded to

J. A. KENDALL, 32, Waterloo, Blyth, an assiduous student, who invariably furnishes us with good papers. In January, he received an extra prize from us.

The Second prize is awarded to

W. H. WEDDELL, Austin-street, Stamford, who obtained a similar acknowledgement of merit in December last, and a First Prize in February.

Marks awarded for Answers.

	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	E. Total.
Kendall (1st prize) ..	8	6	10	10	6	9	4	6	6	4	7 76
Weddell (2nd prize) ..	8	5	10	10	6	5	6	6	4	4	6 75
J. W. Evans ..	8	6	9	9	8	8	6	6	4	6	7 73
A. Fraser ..	8	6	9	9	6	8	5	6	6	4	4 71
J. C. Thresh ..	8	5	9	7	6	9	5	6	6	4	5 70
J. Trethane ..	8	6	10	9	6	9	0	6	4	5	6 69
J. W. ..	8	6	9	9	6	8	4	6	6	4	5 69
J. N. Bentley ..	8	6	8	9	6	9	0	6	6	4	6 68
W. Greig ..	7	5	9	5	6	8	5	4	6	4	6 65
A. F. S. ..	7	6	10	8	6	7	0	6	6	4	6 65
J. Gregory ..	8	6	9	10	6	0	0	6	6	4	5 64
A. H. Hale ..	6	5	11	8	6	0	0	6	6	4	2 63
J. Jolly ..	7	6	11	8	6	0	4	6	6	3	5 62
A. J. Pepper ..	5	5	8	6	6	7	4	4	5	2	6 61
Solus ..	7	6	10	0	9	4	6	3	4	5	6 60
W. Lucas ..	7	6	10	0	5	9	5	6	6	3	2 59
A. E. I. ..	8	6	9	5	4	0	4	6	6	5	4 57
H. Haywood ..	8	5	10	6	6	0	0	6	0	5	53
J. D. D. Thomas ..	7	5	10	0	6	0	4	6	6	3	5 52
Edina ..	8	6	6	0	0	0	5	6	6	0	4 41
W. J. Smith ..	6	5	8	0	0	0	5	6	4	0	3 37
J. Paulin ..	6	5	8	0	0	0	6	6	6	4	36
Contents ..	6	5	—	—	—	—	4	—	6	—	0 21
C. P. H. ..	7	6	—	—	—	—	0	—	6	—	1 20

Books offered as First Prizes.

- Atfield's Introduction to Pharmaceutical Chemistry. (Van Voorst.)
 Brooke's Elements of Natural Philosophy. (Churchill.)
 Conington's Handbook of Chemical Analysis, with Tables of Qualitative Analysis adapted to the same. (Longmans.)
 Elliot and Storer's Manual of Inorganic Chemistry. (Van Voorst.)
 Fownes's Manual of Elementary Chemistry, Theoretical and Practical (Churchill.)
 Fresenius's Qualitative Analysis. (Churchill.)
 Ganot and Atkinson's Elementary Treatise on Physics. (Longmans.)
 Garrod's Materia Medica; with Modern Chemical Notation. (Walton.)
 Nou's Chemical Analysis, Qualitative and Quantitative. (Beve.)
 Northcote and Church's Qualitative Analysis. (Van Voorst.)
 Royle and Headland's Materia Medica. (Churchill.)
 Willamson's Chemistry for Students. (Clarendon Press.)
 [Any other scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.]

Books offered as Second Prizes.

- Barth's Introduction to Scientific Chemistry. (Groombridge.)
 Bloxau's Laboratory Teaching. (Churchill.)
 Church's Laboratory Guide for Students in Agricultural Chemistry. (Van Voorst.)
 Galloway's First Step in Chemistry. (Churchill.)
 Hofmann's Introduction to Modern Chemistry. (Walton.)
 Huxley's Lessons in Elementary Physiology. (Macmillan.)
 Oliver's Lessons in Elementary Botany. (Macmillan.)
 Pott's Elements of Buid. School Edition. (Longmans.)
 Roscoe's Lessons in Elementary Chemistry. (Macmillan.)
 Wurtz's History of Chemical Theory. Translated by Watts. (Macmillan.)
 Wurtz's Introduction to Chemical Philosophy. Reprinted from the "Chemical News."
 [Any other scientific book which is sold for about five shillings may be taken as a second prize.]

NEW AND GIANTIC PLANT.—Living specimens have been forwarded to this country from Nicaragua, of one of the most gigantic plants in the vegetable kingdom. It is closely allied to the Arums (or "Lords and Ladies") of our hedges, and until the present time has wholly escaped the notice of travelling botanists. It produces but one leaf, nearly 14 ft. in length, supported on a stalk 10 ft. long. The stem of the flower is a foot in circumference, the spathe or flower 2 ft. long, purplish blue in colour, with a powerful carrion-like odour. As this remarkable species of Aroidæ is quite new to science, it has not yet received a name.—*Builder*.



MANCHESTER CHEMISTS' AND DRUGGISTS' ASSOCIATION.

THE first annual social meeting in connection with this Association was held in the Memorial Hall, Albert-square, Manchester, on the evening of Tuesday, the 20th ult. Refreshments were served in the lower rooms of the building at six o'clock, and a *conversazione* and exhibition was opened in the large hall at a later hour, when addresses were delivered, and a varied assortment of articles connected with the trade was shown. The exhibition, to which many well-known firms in London and other parts of the country, as well as gentlemen in the locality contributed, was very successful, and seemed to excite great interest among the members of the Association. Superior collections of drugs and Materia Medica specimens were shown by Messrs. Hodgkinson, Stead, and Treacher, and Messrs. Horner and Son, of London, and a cabinet of Materia Medica specimens was presented by Messrs. Evans, Sons, and Co., of Liverpool. Mr. Ransome, of Hitchin, sent some remarkably fine specimens of scammony root and resin, and a collection of rare chemicals; and a case of platinum vessels, from Messrs. Johnson, Mathey, and Co., of London, were exhibited. Among others were a number of microscopes, contributed by Mr. Dancer; also a very valuable binocular instrument, with recent improvements by Collins, of Great Titchfield-street, London; an interesting collection of metrical weights, measures, and coins, from Professor Atfield, of the Pharmaceutical Society of London; Bushby's pill-making machine, oil-testers, pyrometers, etc., from Messrs. Bailey and Co., Albion Works, Salford; and a large collection of photographs by Mr. Wardley, from Mr. Mudd, St. Ann's-square, Manchester; collections of dried medicinal plants, geological specimens, coins, and a variety of objects of interest contributed by members of the Association and friends. Several revolving stereoscopes, including a much improved one by Mr. Meagher, of London, were also shown. There was a large attendance, among those present being Professor Roscoe, of Owen's College, and Professor Williamson, Dr. Lloyd Roberts, Dr. Ingle, Dr. Mann, Mr. Broadbent, Mr. Clements, Mr. Barnard, Mr. William Heath, etc. Mr. Councilleur Brown, Vice-President of the Association, presided.

The CHAIRMAN, in opening the proceedings, said that he had to explain that Mr. Standing, the President of the Association, had been present at the exhibition during the evening, but the state of his health did not permit him to remain. Under those circumstances, he had requested him (the chairman) to apologise, and, as Vice-President, take the chair in his absence. (Applause.) He congratulated them on the success of the exhibition, and on the great number of friends who were present. He had no doubt that but for the inauspicious state of the weather the gathering would have been still larger. He might state that Dr. Roscoe, of Owen's College, and Professor Williamson, had been present, but they had been unexpectedly called away. He had received a letter from Thomas Turner, Esq., who would have been present but for a previous engagement, and he had had letters, expressing regret at their inability to attend, from Mr. Clayton, Mr. Leigh, Officer of Health for the City, Mr. Greaves, Dr. Angus Smith, and one or two other medical gentlemen whom he would have been glad to have seen present. He explained that the meeting was not the annual meeting of the Association; that, as most of his hearers were aware, would take place in October. It had been thought right that the end of the first session should not be allowed to pass without calling the members together in a rather different manner than that customary at the monthly meetings of the Association, and it was in pursuance of that desire that the meeting of that evening had been called. They had thought it better to anticipate the annual report by a short statement of the proceedings of the Society, which he would call on the secretary to read.

The hon. secretary, Mr. F. BADEN BENGER, read a report of the proceedings of the Association. The report stated

that the late period at which the Association was organised prevented any arrangements being made for an extended course of instruction. The Council, therefore, confined themselves to the most pressing wants, namely, instruction in Latin, Chemistry, and Materia Medica; and in these branches most satisfactory results had been attained. The number of pupils who had entered for the Latin class was forty-eight, for the Chemistry class sixty-two, and for the Materia Medica class fifty-eight; and the average attendance at each had been good. The lecturers in each department had expressed themselves satisfied with the progress of their pupils, and there could be little doubt that when the annual report would be presented in October, it would have to notice the successful termination of the first educational session. Since the formation of the Association in November last, there had been five monthly meetings held, at which papers had been read by members, and the attendance and interest manifested in these meetings had been very encouraging. The papers read had been as follows:—On the Pharmacy Act of 1868, by Mr. Wilkinson; on Permentation, by Mr. L. Siebold; on the Question of Uniform and R-munerative Prices, by Mr. Hampson; on some of the Effects and Applications of Current Electricity, by Mr. F. Baden Bengier; and on Spectrum Analysis, by Mr. J. T. Slugg, F.R.A.S. In addition to this, a special meeting had been held on April 2nd, to discuss the subject treated of in Mr. Hampson's paper. Up to that time, 138 members and 138 associates had paid their subscriptions for the current year, and the wide interest felt in the Association was proved by the fact that many of those were resident in Ashton-under-Lyne, Bolton, Oldham, Rochdale, Stockport, and Stalybridge.

The CHAIRMAN then said: The passing of the Pharmacy Act last session marks an important epoch in our history. It will be fraught, I believe, with good in the future; but, like many other good measures, it will be found to entail a little inconvenience at present. It has had one good result, in inducing us all to unite in the movement for the promotion of education, more especially among the younger members of our profession. Many efforts have been made in past years to obtain this laudable object, and, many years ago, I was connected with efforts made in that direction. We at that time failed to enlist the interest and receive the encouragement which we hoped to have obtained. The passing of the Pharmacy Act now makes education compulsory, and it requires from assistants and future members of the trade what was never previously demanded. Under these circumstances, we, as principals who were eligible to be registered under that Act without any examination, felt that a large amount of sympathy ought to be bestowed upon those who, although having passed some years in the trade, were by unavoidable circumstances precluded from the benefits of education, but were yet compelled to pass an examination. You are all aware, doubtless, that it was no part of the original scheme of the Pharmaceutical Society that young men and assistants now connected with the trade should universally, and without exception, be compelled to pass an examination of any kind whatever before they commenced business upon their own responsibility. The Pharmaceutical Society did not require anything of the kind; it was a requirement of certain members of Parliament in committee. I, for one, regret that such a provision was ever introduced into the Act. I believe a more liberal interpretation of the requirements of the case would have been attended with some benefits, and not have entailed any practical difficulties in the future. I certainly think that everyone who happened to be in business on his own account before the 1st of August last has a right to continue in that business, and has a vested interest. And there are a very great number of young men in the trade who have equally a vested interest, as by their practical knowledge, their habits of care and thought, and their general good conduct and demeanour, have earned for themselves a position entitling them not only to the respect of their employers, but to the confidence of the public and the profession they have to serve. I consider that a peculiar hardship presses upon these young men, and hundreds of that class there are who will now have to prepare for examination. I hope the examiners appointed under the Pharmacy Act, in conjunction with the Privy Council, will allow that examination to be of as modified a character as possible. The

provisions of the Act are inevitable. An Act of Parliament, as you are aware, is a powerful thing, and we have to deal with the Act as it is. That Act making education compulsory, and requiring a preliminary examination and a proper qualification before anyone can commence the business which we have hitherto conducted, it devolves on us who are already in the business to make provision for the young men coming into the trade. Even to serve our own interests, it behoves us that facilities should be afforded for the necessary education of those young men. The Pharmacy Act, as you are all aware, was passed at the latter end of last July, and by the provisions of that Act, up to December 31st was given for the registration of those already in the business, and for the application of assistants to be allowed to avail themselves of the modified examination. Some time after the passing of the Act, one or two gentlemen engaged in the trade in Manchester met together, and it was felt by them that the young men were in this position—that there was a statutory requirement from them, and that there were no real means existing in this city to obtain the requisite knowledge. The first idea was to establish classes which would give a smattering of everything, and enable them to pass the examination. We had not gone very far in our scheme when we found that it was utterly impracticable, and that no good results could possibly be produced from cramming. (Hear, hear.) We, therefore, turned our attention to a general scheme of education, which would alike suit both the older and younger in the profession. But, in doing this, we were in this difficulty: we were already in the middle of October, and we had very little time for business. Our first idea, then, was that, as a body of chemists and pharmacutists, and not as an educational association, we should connect ourselves with that noble institution already existing in our midst—Owen's College. (Hear, hear, and applause.) I believe, and my fellow-workers unite in believing, that we would have facilities there which we could not obtain anywhere else, and that we have in that institution one of which we may well be proud—(hear, hear)—and that a young man who is in quest of education can obtain it there, without any great trouble or expense. (Applause.) Acting upon this, I, with two of those gentlemen to whom I have referred, had an interview with Principal Greenwood and Professor Roscoe, and I take this opportunity of stating that we were received by both of those gentlemen in the most kind and hearty manner, and from them received assurances that they would do all they could to arrange for the formation of classes for our Association. (Applause.) And I may say, too, that when the matter was mentioned to the trustees, they at once met the wishes of the professors, and stated that the College was entirely at our service, and that we had nothing whatever to do but unite in a scheme for education. There was this unfortunate circumstance, however, that it was then the middle of their session, and we could only arrange for a course of lectures for pharmaceutical students, to commence in January. That course of lectures is now being delivered, and will be completed in a few weeks from this time. It has proved, I hope, a very useful and interesting course to those who have attended it. I should also state that we took rooms of our own in Dickinson-street, and commenced a series of lectures upon Materia Medica, and classes for Latin. I hope that between now and next session (and I have had some conversation to-night on the subject with Professors Roscoe and Williamson) a proper scheme of education will be drawn out by the teachers of Owen's College, endorsed by the trustees, considered by the Council of this Association; and I hope before long there will be a scheme sent out to the trade including a course of education which will qualify the young men of this district, if they take advantage of it in a proper manner, to go up to London, and, without residence, pass their examination, and come off triumphantly. (Loud applause.) I am happy to say that the number of members and associates has very largely increased, but I do not think we have anything like the number we ought to have in so densely a populated district. It ought to suggest itself, I think, to every member of the trade, to join an association of so much interest and value to them. I look with hope to the future, although I cannot refrain from looking at the difficulties which suggest themselves to my mind. In the short report read by Mr. Bengier, the monthly meetings have been referred to. They

have been very interesting, and are increasing in interest. We have had more numerous attendances, I think, than I remember on any former occasion. Subjects have been treated in a popular and exhaustive manner, and proved sources of instruction to all who have heard them. The meetings have also been productive of great good feeling among the trade, and made many acquaintances among gentlemen who were previously strangers to each other. The question of our future position is a very important one. Some reference has been made to the question of prices. It has been a long-standing opprobrium in our business that we have never united together to get a uniformity of our prices. This arises from the isolated position in which chemists have gone on from year to year. I should be very sorry, however, that any member of this Association or the public should suppose that we are combining for increased charges. All I wish is to see our business take a real, practical, intelligent, trading position. (Applause.) We are to-night favoured with the presence of a number of friends of the medical profession, and we cordially welcome them, and trust that our Association may in the future produce a more intimate connection. I beg to call on Dr. Ingle to offer a few remarks.

After expressing his surprise at being called on, and consequent unpreparedness, Dr. INGLE said it afforded him sincere pleasure to be present at such a large gathering of the trade, and the success of the Association was very encouraging. Combination in trade had often been found to be productive of great good, and it had also been found to be productive of great evil; but he thought the combination they had formed could not have other than good results. The Association they had formed was so admirable that he was sure it ought to be the ambition of every medical gentleman to encourage it. Many subjects had been touched by the chairman, which it would be extremely interesting to enlarge upon; but there was one which he had not touched upon, which would be of as great interest to every member of the medical profession as it would be to every member of the Chemists' Association—he meant the question of medical men discontinuing entirely to furnish their own medicines, and of druggists discontinuing to prescribe over the counter. He thought, if unreserved confidence were placed in the practical dispensing chemist, it would be a benefit, to a great extent, not only the profession, but also the medical profession. It was to be deplored that they had in their business men who keep down the social standing of chemists and druggists by doing what respectable druggists carrying on a legitimate trade would not do. It was lamentable also that they should have medical men who were daily keeping down the social standing, and hindering the position they ought to take.

Mr. SLUGE gave an interesting account of the changes which had taken place in connection with the trade since he first arrived in Manchester forty years ago.

The CHAIRMAN proposed a vote of thanks to the gentlemen who contributed to the exhibition, which was unanimously awarded.

Mr. SLUGE proposed a vote of thanks to the Chairman for his conduct in the chair, and for the attention he had paid to the interests of the Association since its formation. Mr. BROWN was well known to all in the trade for his genial manner and his sagacity, and it was mainly owing to his exertions that the exhibition proved such a success.

Dr. HEATH seconded the motion, and it was passed with acclamation.

The CHAIRMAN having briefly returned thanks, the meeting dispersed to partake of refreshments; and inspect the articles of interest exhibited.

HALIFAX AND DISTRICT CHEMISTS' AND DRUGGISTS' ASSOCIATION.

A MEETING of the members of the above Association was held at the Mechanics' Institute, Halifax, on Wednesday, the 14th ult. The chair was occupied by Mr. DYER, president, who, in opening the meeting, informed the members of the result attained by the deputation, appointed at the last meeting to wait upon the mayor and town-clerk in reference to the Petroleum Act. The deputation had explained

to the municipal authorities the peculiar position of the trade with reference to the Act, the operation of which was vexatious and costly, and unproductive of any advantage to themselves or to the public. They contended that the promoters of the Bill could not have foreseen its effect on the trade of the chemist and druggist, and they referred to the opinion of the Secretary of the Pharmaceutical Society, and to the action of other authorities in the various large towns. The deputation had obtained from his worship the promise that there should be no interference with the sale of benzine so long as it was sold in the quantities and form in which the trade had hitherto sold it, pending further instructions from London, of which the trade would be duly informed. The Chairman then, alluding to the letter of the Under-Secretary for the Home Department to Mr. Thomas, expressed the pleasure he felt in the probability of this annoyance being soon removed. He called upon the Secretary to read to the members the recommendations of the Committee as to the scale of charges to be adopted by the members for the dispensing of prescriptions.

The SECRETARY, in presenting the report of the Committee, said it would be a waste of time to enlarge upon the necessity of some understood minimum rate of charges being adopted; the great difference that had hitherto existed was a source of continual annoyance and ill-feeling, and damaged the trade in the eyes of the public, who, on such premises, formed very erroneous opinions as to our profits. The Committee had, after several weeks of careful consideration, placed in his hands the report, which he felt sure would meet in its main points with the concurrence of the leading members of the trade. Briefly pointing out the absolute need of cordial co-operation in such a project to make it really a success, he then placed before the members the list of prices and private mark. After considerable discussion, and with only slight alterations, the plan was unanimously carried, on the motion of Mr. C. E. Brierley, seconded by Mr. Pollard.

Mr. FARR then proposed, and Mr. BROOK seconded, that the meetings of the Association be held in future at the Mechanics' Institute, and that the Secretary be empowered to make the best arrangements he can with the directors to suit the requirements of the Association. The motion was carried.

Mr. JESSOP proposed, and Mr. J. B. BRIERLEY seconded, that the members meet not seldom more than once a month—business or no business—paper or no paper. The Secretary proposed as an amendment, that there be no meeting held in the summer months, except for urgent business. Mr. BROOK seconded the amendment, which was carried.

The Secretary promised to place in each member's hands the list of prices as soon as possible, when the meeting separated.

HOUSE OF COMMONS.

PHARMACY ACT, 1868, AMENDMENT BILL.

On the motion for going into Committee on this Bill, on the 29th ult.

Dr. BREWER said he had an amendment on the paper that the Bill should be committed that day six months. The Bill would not secure the purposes it contemplated, and would raise objections of a more serious character than those at present entertained on the subject. The word "poison" was used in the Bill in a way that would lead to great inconvenience; and it was of the utmost importance that the wide application of the word in the Bill should not be permitted to pass into law. The word as used would include paregoric lozenges and other preparations which were of a comparatively harmless character. It would be highly objectionable that such substances, when sold, should be labelled "poison," and in many cases medicines so inscribed would have a very injurious effect upon patients, simply from the patient knowing of that medicine being so described.

Mr. NEWBRIGHT objected to the Bill, because it extended the exemptions in favour of veterinary surgeons to ordinary farriers, who had no diploma.

Mr. W. E. FORSTER hoped that the hon. member for Colchester would allow the Bill to go into committee.

Dr. BREWER said he could not resist anything the Government thought right.

The amendment was withdrawn, and the Bill went into committee.

Mr. POCHIN said that the provisions of the Act of last year were grossly disregarded, and that the defects of the Act were not met by the present Bill. Some more radical change in the Act was required. He moved that progress be reported.

THE LORD-ADVOCATE said that in the Act of last year, the word "apothecary" was erroneously substituted for "legally qualified medical practitioner." The object of the present Bill was to secure immunity from interference with the practice of legally qualified practitioners. As worded, the Bill applied only to Scotland; he moved amendments to extend the immunity throughout Great Britain, stating that he had been requested to do so by a Committee of a most numerous and competent body representing the medical profession, and called the British Medical Association. The amendments were adopted.

Mr. WHALLEY supported the motion to report progress on the ground that the legislation of last year upon this subject had caused the deaths of many persons. The question before the Committee was evidently one of life and death, and if it came to a vote he should be quite at a loss to know whether he would be voting for the life or death of a person.

The motion to report progress was rejected without a division, and

The Bill passed through committee.

THE SANDFORD TESTIMONIAL.

SUBSCRIPTIONS received since the publication of the last list:—

£ s. d.	£ s. d.
Allen, W., Dumfries .. 0 5 0	Howarth, Jas., Doncaster .. 0 5 0
Allen, J., Plymouth .. 0 5 0	Hughes, Edward, Altrincham .. 0 5 0
Barber, George, Liverpool .. 0 10 6	Hughes, Jno., Altrincham .. 0 5 0
Burch, James, Bridport .. 0 10 6	Hunt, Thomas, Liverpool .. 0 10 6
Blake, Charles T., 47, Piccadilly .. 1 1 0	Jackson, Jno., Southampton .. 1 1 0
Bullock and Reynolds, Hanover-street .. 1 1 0	Jessop, John, Halifax .. 0 5 0
Burrow, W. & J., Great Malvern .. 1 1 0	Jones, G. W., Worsnop .. 0 5 0
Butt, R. N., Chestnut .. 0 10 0	Lord, Chas., Tottenham .. 0 10 0
Clapp, E. P., Stoke Newington, N. ... 0 5 0	Marsden and Sons, 33, Queen-street, E.C. ... 1 1 0
Clark, John, Liverpool .. 0 10 0	Mather, W., London and Manchester .. 1 1 0
Crispe, Jas., 4, Cheapside .. 1 1 0	Robinson, Jas., Norwich .. 0 10 6
Crotch, J., 31, Edgeware-st. .. 1 1 0	Romans, Thomas W., Wakefield .. 0 5 0
Darjes, Joseph, Hay .. 0 2 6	Rowntree, Thomas, Wakefield .. 0 5 0
Davis, J. M., High-street, Shoreditch .. 0 10 0	Stevenson, R., Derby .. 0 5 0
Dowse, Dr. S., Charing-cross Hospital .. 1 1 0	Thomas, H., St. Leonard's-on-Sea .. 0 10 6
Evans, John, Carnarvon .. 0 10 6	Trotman, A. W., Cambridge-street, Hyde-pk. .. 0 5 0
Farmer, John, Putney .. 0 5 0	Wilkes, D. S., Upton-on-Severn .. 0 2 6
Ferguson, J., Liverpool .. 0 10 6	Yarde, Giles, Lamb's Conduit-street .. 1 1 0
Forster & Elise, Brighton .. 1 1 0	Young, Thos., Millwall, E. ... 0 5 0
Gale & Co., Bouvier-st. ... 2 2 0	
Gunn, S. J., Harrow-on-the-Hill .. 0 5 0	
Haynes, Charles H., 110, Talbot-road, W. ... 0 5 0	

Gentlemen who have not yet paid their subscriptions are requested to forward the amount immediately to the treasurer, B. B. Orridge, Esq., 33, Ironmonger-lane, E.C., or to Mr. Elias Bremridge, 17, Bloomsbury-square, W.C.

At a meeting of the Committee on Monday, the 19th of April, it was announced that the total amount subscribed is £503 13s. 6d. A sub-committee was appointed to make the necessary arrangements with an eminent Royal Academician for the painting of the portrait.

It was also resolved that plate of the value of 200 guineas be purchased and presented to Mr. Sandford, in the Lecture Theatre of the Pharmaceutical Society, on Wednesday, the 19th of May next, at 3 p.m., after the Society's Annual Meeting.

A dinner will be provided, to celebrate the occasion, at 6 p.m. on the same day, at the Freemasons' Tavern, Great Queen-street, Lincoln's Inn Fields. The chair will be taken by Mr. Frederick Barron, chairman of the General Committee. Tickets, 21s. each, may be obtained of Mr. Henry Matthews, hon. sec., 60, Gower-street, W.C.; or of Mr.

Bremridge, 17, Bloomsbury-square, W.C., by application before the 18th of May.

Subscribers to the fund, and all interested in pharmacy, are invited to attend.

TESTIMONIAL TO MR. JOHN MACKAY, HON. SECRETARY TO THE NORTH BRITISH BRANCH OF THE PHARMACEUTICAL SOCIETY.

Amount last advertised	£ s. d.	Lawrence, Jno., ..	0 10 6
Beaton & Co., Rotheman .. 1 1 0	Loftus, C. C. ..	0 5 0	
Black, John, Glasgow .. 0 5 0	Mayer & Son, London ..	2 2 0	
Brown, Bros., .. 0 10 6	McMillan, J., Glasgow ..	0 10 6	
Bird, W. L., London .. 1 1 0	Moffat, Thos., D. ...	1 1 0	
Bottle, Mr. .. 1 1 0	Nesbitt, J., Portobello ..	1 1 0	
Davenport, J.T., .. 1 1 0	Nichol, John, Glasgow ..	0 5 0	
Deane, Mr. .. 1 1 0	Orridge, J., London ..	1 0 0	
Davidson, Jno., Berwick .. 0 10 6	Rait, R. C., Glasgow ..	0 10 6	
Frazer & Green, Glasgow .. 1 1 0	Rawdin, J., Jedburgh ..	0 10 6	
Gilmour, A., Burntisland .. 0 10 6	Robertson, A. M., Glasgow ..	1 1 0	
Gorrie, A., Kirkcaldy .. 0 10 6	Russell, Mr. Dundee ..	1 1 0	
Greig, Wm., Glasgow .. 1 1 0	S. H. F., Glasgow ..	0 3 0	
Hartree, P., .. 0 5 0	Shield & Mill, Arbroath ..	1 1 0	
Harrower, P., .. 0 10 6	Sparrow, W. P. C., London ..	1 1 0	
Jasp, John .. 0 5 0	Standing, Thos., ..	1 1 0	
Kennedy, W., .. 0 5 0	Walker, D. P., Glasgow ..	0 5 0	
Kinninmont, A., .. 1 1 0	White, W., ..	0 10 6	

H. C. BALDEN, Chairman of Mr. Mackay's Committee.

COMPLIMENTARY DINNER TO DR. ODLING.

On the evening of Tuesday last, April 20th, a number of gentlemen who have been associated with Dr. Odling, as past and present members of the Council of the Chemical Society, in the thirteen years during which he has filled the office of secretary, entertained the doctor at a complimentary banquet, at the Albion Tavern, Aldersgate-street. The chair was occupied by Dr. Warren De La Rue, F.R.S., V.P.C.S., who supported right and left by Dr. Odling, F.R.S.; Dr. Tyndall, F.R.S.; Professor Williamson, F.R.S. (Pres. C.S.); Sir Benjamin Brodie, Bart., F.R.S., &c. The following is a list of those who took part in the entertainment:—Messrs. E. A. Abel, F.R.S.; E. Atkinson; J. Anderson, M.D.; J. Lowthian Bell; G. B. Buckton, F.R.S.; F. C. Calvert, F.R.S.; D. Campbell; H. Church, F.R.S.; W. Crookes, F.R.S.; H. Debus, Ph.D., F.R.S.; F. Field, F.R.S.; D. Forbes, F.R.S.; G. C. Foster; J. H. Gilbert, Ph.D., F.R.S.; J. H. Gladstone, Ph.D., F.R.S.; D. Hanbury, F.R.S.; A. V. Harcourt, F.R.S.; C. Heisch; H. Letheby, M.A., M.B.; G. D. Longstaff, M.D.; N. S. Maskelyne, M.A.; A. Matthiessen, Ph.D., F.R.S.; G. H. Makins; E. J. Mills; Hugo Müller, Ph.D., F.R.S.; W. Marcet, M.D., F.R.S.; E. C. Nicholson; H. M. Noad, M.D., F.R.S.; W. H. Perkin, F.R.S.; D. S. Price, Ph.D.; A. P. Price, Ph.D.; T. Redwood, Ph.D.; W. J. Russell, Ph.D.; J. Denham Smith; A. Smee, F.R.S.; J. A. Voelcker, Ph.D.; H. Watts, B.A., F.R.S.; J. Williams; J. T. Way; and J. A. Wanklyn. Letters expressing regret at being unable to attend were read from E. Frankland, Ph.D., F.R.S.; T. Graham, D.C.L., F.R.S.; A. W. Hofmann, Ph.D., LL.D., F.R.S.; H. Benze Jones, M.D., F.R.S.; J. B. Lawes, F.R.S.; W. A. Miller, M.D., LL.D., V.P.R.S.; Lyon Playfair, C.B., M.P., Ph.D., F.R.S.; H. E. Roscoe, B.A., Ph.D., F.R.S.; R. Angus Smith, Ph.D., F.R.S.; E. Schunck, Ph.D., F.R.S.; J. Stenhouse, LL.D., F.R.S.; and Colonel P. Yorke, F.R.S. After the usual loyal toasts, the Chairman proposed, in eloquent and appropriate terms, the toast of the evening, "The Health of Dr. Odling," and drew attention to a handsome silver tankard, which had been presented by some of those present, appropriately inscribed, for Dr. Odling's acceptance, as a memento of this day. After this had been filled with the "ethylic compound of complex composition and high saturating power," as the Chairman aptly described it, and had been passed round as a loving cup to all present, it was presented to the doctor. The Chairman concluded his able speech amid loud and continued applause; and the toast was drunk upstanding, amidst enthusiastic cheers. Dr. Odling replied in feeling and impressive words, in which he spoke of the great advantage and pleasure it had been to form the acquaintance of those distinguished men who had filled the presidential chair, during the thirteen years in which he had occupied the secretaryship of the Chemical Society. Appropriate speeches were afterwards made by

Professor Williamson, as President of the Chemical Society; Professor Tyndall, on behalf of the visitors; Sir Benjamin Brodie, Bart.; Messrs. Harcourt, Perkin, and Dr. H. Müller, as Secretaries; Professor Abel, Dr. Gladstone, Dr. Longstaff, Professor Anderson, and others. In the interval between the speeches Professor Abel performed a selection of operatic music on the piano, and songs, comic and otherwise, were sung by Mr. F. Field, and also by Colonel Boxer, Captain Goodenough, Colonel De La Rue, and Mr. J. C. Brough, who were present as guests. Great credit is due to Messrs. Abel, Müller, and Nicholson, who formed the executive committee, for the admirable manner in which everything was organised.—*Chemical News*.

HOW TO BENEFIT OUR COLONIES.

THE President of the Legislative Council of Montserrat (the Hon. W. R. Payne) in his annual report to the Secretary of State, makes the following remarks:—

"The largest landowners in the colony are the Messrs. Sturge, of Birmingham. They have invested considerable sums of money in the reclamation of abandoned estates, and by their success and industry other proprietors are stimulated to exertion. This firm have extensively embarked in the cultivation of the lime-tree; and this branch of the undertaking, I am informed, is both promising and remunerative. The lime-juice which is yielded is exported, both in its raw state, for the use more especially of the royal navy and the mercantile marine, and in a concentrated form, to be converted by chemical process in England into citric acid. There is every reason to anticipate that there will continue to be a ready market for this kind of produce, and that ultimately it will prove a source of wealth to the country. It is a species of trade which is capable of high development, and the lime-tree flourishes remarkably well in this island."

The Messrs. Sturge have successfully carried on the manufacture of citric acid and tartaric acid in Wheeley's lane, Birmingham, the juice being principally imported from Messina. The cultivation of the *Citrus Limetta* in the West Indies will be of immense value. Mr. J. E. Sturge is a member of the Legislative Council of Montserrat.

THE LATE EXPLOSION AT MESSRS. DEMUTH'S NAPHTHALENE MANUFACTORY AT OLDBURY.

AT the monthly meeting of the Oldbury Local Board, held on the 7th inst., Mr. Taylor in the chair, and ten other members of the board were present, the question of the desirability of the Board taking some action as to the new erections at the works of the Messrs. Demuth, where a fearful explosion had taken place recently, was introduced by Mr. Collins, who said he had been informed that there was enough material at the works to blow up ten Oldburys. He thought the works ought to be inspected, and that any suggestion made at the late inquest should, if possible, be carried out. He hoped there would not be again any such public calamity as they had a short time ago at these works. He would also remind them that small dealers in such materials as were used at this manufactory had to apply to the magistrates for a license.—The Nuisance Inspector stated he had heard that there had been a very narrow escape of having another accident at the works by a pipe getting clogged.—Mr. Showell said the last accident occurred from the crystallisation of naphthalene in the "worm."—Mr. Howl said he thought it was stated at the inquest that the firm had discovered a plan by which a safety-valve could be applied.—The Clerk said Messrs. Demuth could only be dealt with under the Petroleum Act.—Mr. E. Edwards said that Mr. Demuth had taken great precautions to prevent any future explosion. He had built a reservoir sixty feet square, ten feet deep, and which would hold 150,000 gallons. He had provided a fire-proof fire-engine, which was placed on the banks of the canal, and would throw 12,000 gallons of water per hour. There was one on the works which would throw 50,000, and another which was guaranteed to raise jets of water 180 feet high. If the Board would lay down hose, Mr. Demuth could provide materials to throw 250,000 gallons of water into Oldbury in the course of three hours, and raise the same a height of 180 feet. Mr. Demuth had

erected four fire-proof vaults, in which all manufactured liquor would be kept, and the yard was divided into several compartments, shut off by high and strong walls, and the openings communicating with each other would be closed by iron doors, so that the liquid would be cut off from the place of manufacture. Nothing was manufactured at the works which was explosive—only that which was inflammable. The late accident happened through carelessness on the part of a workman.—Mr. Howl thought it was strange that such immense preparations were being made at the works if there were nothing of a very dangerous character manufactured. It was stated that Mr. Demuth had displayed great courtesy in all his relations with the Board, and it was agreed that the Clerk should write to that gentleman, requesting him to apply the safety-valve, as recommended at the inquest.

POISONING CASES.

ON the 26th ult. an ostler, named Luke Curry, poisoned himself at Sunderland, by wilfully taking a dose of laudanum. From the evidence of Mr. Gilles, chemist, who gave evidence at the coroner's inquiry, it appeared that deceased was supplied by his shopboy with a portion of the laudanum on the morning of the 25th ult., and a label was placed on the bottle; he went again for twopennyworth more, and witness then saw that the label of Mr. Ritson, chemist, had been placed over that of his own, and deceased admitted that he had obtained one pennyworth from Mr. Ritson's shop. The verdict of the coroner's jury was that deceased had been poisoned by taking laudanum, he not being accountable for his actions at the time.

A shocking case of accidental poisoning occurred at Blackburn on the 24th ult. A lodging-house keeper, named Thompson, having purchased a number of bottles at a sale on the preceding day, placed three apparently containing water in a large teapot and left it on the footpath near his house door. Two boys, aged four years, sons of Thompson and a grocer named Sharples, saw the bottles on the following evening, and drank some of the contents. Both were frightfully burned, the liquor turning out to be vitriol.

A case of poisoning of a child has occurred at Sheffield from the culpable negligence of placing poisons within the reach of inexperienced persons. On the 20th ult., a nurse girl, aged 14, was requested by her mistress to take an infant about five weeks old up stairs and get it to sleep. It appears that the child was restless and fretful, and the girl, to quiet her, gave her several drops of laudanum from a bottle that was on the mantelpiece in the bedroom. The nurse girl soon afterwards became alarmed at the appearance of the infant, and without informing her mistress of what she had done, left the house, went home, and told her mother. The latter went immediately to the girl's mistress, and the child was found breathing heavily. Medical assistance was obtained, but the baby died about midnight. The girl, when spoken to, said she had seen a former mistress of hers give laudanum to her children when they were restless, and she was not aware she was doing wrong. At the coroner's inquiry on the infant the jury returned the following verdict:—"That the deceased came to her death from poison administered in ignorance of its properties, and without any felonious intent."

An inquiry was instituted into the death of a man from poisoning, at Birmingham, on the 8th instant. It appears that the deceased, William Sands, a carpenter, was admitted into the infirmary-ward of the workhouse on the 4th inst., suffering from a bad leg. The house-surgeon of the institution (Mr. Whitcombe) gave him two bottles of medicine, one being a mixture to be taken internally, and the other a lotion, which contained one ounce of carbolic acid to thirty-nine parts water. On the 6th inst. he appeared to be in comparatively good health, but on the following morning he was observed by another patient to raise himself up in bed, and take a bottle from his bedside, and take a good draught. He then lay down, and shortly afterwards rose up again, and took a second draught from the same bottle. Shortly afterwards a rattling sound was heard in the man's throat, and on the attendant of the ward going to see what was the matter, he found that the deceased had taken a quantity of liquid from the bottle which contained the car-

bolic acid. The bottle had a label upon it, upon which the word "poison" was printed. The surgeon was immediately summoned, but the man died in a few minutes. A *post-mortem* examination was performed by Mr. Whitcombe, assisted by Mr. O. Pemberton, who gave evidence that there was considerable inflammation of the stomach; and in their opinion deceased died from syncope, resulting from the poison he had taken. The jury returned a verdict that deceased died on the 7th inst., from taking carbolic acid, but why he took it there was no evidence to show.

An engine-driver, in the employ of the London and North-Western Railway, had a narrow escape at Leamington last week. It appears that after taking his dinner he took from a box on the engine a bottle, which he supposed contained beer, and drank a portion of its contents. He immediately discovered that he had imbibed a quantity of oxalic acid in solution, which the stoker had placed in the box in a bottle resembling that containing his beer. He was taken to the Warneford Hospital, where the usual antidotes were promptly applied, and with complete success.

On the 10th inst. an inquest was held at Bermudaesey by Mr. Carter, respecting the death of Mr. William Canter, aged thirty-five years, an assistant to Dr. Downs, of White-street. The deceased had been assistant to Dr. Downs for the last fifteen years, but latterly had not enjoyed very good health, and was unable to sleep. On Thursday afternoon he said that he had taken chloroform to make him sleep, and hoped he had not taken too much. Shortly after this a fall was heard in the parlour, and the deceased was found lying upon the floor on his face. He was quite insensible, and died in a short time. Dr. Downs said the deceased died from the effects of prussic acid. He (the witness) was of opinion that the deceased had taken chloroform to produce sleep, and that, afterwards, finding himself sick, he had taken the prussic acid to allay the sick feeling, and had taken an overdose. He had no reason to believe that Canter intended to commit suicide. The jury returned a verdict of "Death from misadventure."

THE LYNN TRAGEDY.

MR. A. F. LANGFORD AND HIS INFANT DAUGHTER POISONED BY STRYCHNINE.

On Wednesday, the 5th instant, Mr. E. M. Beloe, the coroner for the borough of Lynn, held an inquest on the body of Charlotte Langford, the infant daughter of Mr. A. F. Langford, a chemist in the town, who had died under circumstances leading to the belief that she had been poisoned by strychnine. It appeared from the evidence that Mrs. Langford, the mother of the child, has for the last six months been in very low spirits. She imagined that her husband's business had fallen off, and that he was on the brink of poverty. At the time of her confinement she had complained of pain in the head, and was much excited. On the 26th ult., Dr. Lowe, the medical attendant of the family, was sent for to see Mr. Langford, who was said to be dying. He found him in bed, suffering from convulsions, and on asking his wife when they came on, she said she had poisoned herself and her husband with strychnine. She had just said this when she was herself thrown into a strong tetanic convulsion. Remedies were at once administered, and both Mr. Langford and his wife recovered. The former, however, died from the effects of the poison on the 7th inst. The deceased child was found in its cradle, strongly convulsed; the stomach-pump was at once used, but it did not recover. The contents of various parts of the body were sent to Dr. Letheby, of London, who found strychnine in the stomach, and gave his opinion that the child had died from its effects. He did not think the child would absorb the poison through the breast of its mother. He never heard of such a case, but it might be possible. Mrs. Langford, sen., who sent for the medical men on the 26th ult., stated that on the morning of that day she was sent for to see her son. Mrs. Langford, jun., put her arms round her neck and said, "Oh, Mrs. Langford, forgive me; I've poisoned myself and poisoned them." The jury returned the following verdict:—"Died of strychnine, given by the mother while in an unsound state of mind."

An inquest was held on the body of Mr. A. F. Langford two days later. A mass of evidence was adduced, but it was

to a great extent a repetition of that given at the inquest also held on the body of the child, Charlotte Langford. A *post-mortem* examination of the deceased was made by Dr. Lowe by order of the coroner. There was some appearance of softening in the spinal cord, but not sufficient to account for death; there was also nothing in the brain to account for death. Assuming that the deceased had been poisoned by strychnia (as admitted by Mrs. Langford), Dr. Lowe stated in his evidence that he believed he would, nevertheless, have recovered if he had been previously in good general health. It was determined that the viscera of the deceased should be submitted to Dr. Letheby for analysis, although Dr. Lowe expressed an opinion that Dr. Letheby would not find any poison after so long an interval.

ACCIDENTS.

FIRE FROM NAPHTHA.

On the 6th inst., an accident occurred at the shop of Messrs. Booth and Robinson, chemists, Rochdale, which seriously injured two persons. It appears that Mr. Hall, an assistant, when coming out of the cellar into the shop, slipped and let a bottle of naphtha fall, which broke, and the contents were scattered all over Mr. Hall and the steps. The naphtha ignited, and Mr. Hall rushed up the steps into the shop all in flames, and endeavoured to rush into the open air, but was restrained by Mr. Whitehead, another chemist in the town, who happened to be in the shop at the time, and the coat of a fellow assistant being wrapped round Mr. Hall, the flames were soon extinguished, but he was burnt about the face and hands badly. The fire on the cellar steps was soon put out without doing much damage.

LAW AND POLICE.

SALE OF POISONS ACT.

At the Cheltenham Police Court on the 12th ult., Mr. William Hands, chemist, was summoned by the Superintendent of Police, under the 17th section of the Sale of Poisons Act, for having sold two pennyworth of strychnine to a man named William Jones, without having entered the man's address in the register provided for the purpose of registering all sales of poisons. Mr. Brydges, solicitor, appeared for Hands, and said he would acknowledge that the address was not entered; but he, at the same time, pointed out that though the 17th section provided that the "name and address" of the purchaser should be entered, the form of register scheduled with the Act made no provision for such an entry, the column in which alone the address could be entered being headed "Name of the purchaser" only. This form was so precisely set out, that chemists were placed in the dilemma of either offending against the section of the Act or against the prescribed form. He found, from his own personal observation, that out of seven chemists whose register he had inspected that only one had entered the address of the purchaser, and he was at a loss to know why the defendant had been singled out, or why, indeed, any proceedings had been taken until the notice had been given of their intention to act upon a point in which the Act itself was so calculated to mislead. Such a proceeding was calculated to defeat the purposes of the Act, which was intended to facilitate the detection of crime; but oddly enough, the Act had made no provisions for compelling chemists to show their registers to the police. Mr. Hands had at once shown his register, knowing that he had tried to comply with the law, but chemists would be chary of doing so if such steps were taken without proper notice. Since these proceedings Mr. Hands had duly entered the addresses.—The magistrate's clerk (Mr. Griffiths) said there could be no doubt that it was intended the addresses should be given. The bench thought it would be sufficient in this case to make public the fact that the "name and address" must in all cases be entered. The information was then dismissed.

MEDICAL REGISTRATION ACT.

At the Birmingham Police Court on the 21st ult., a prosecution was instituted by the Birmingham Medical

Registration Association, under the 14th section of the 21st and 22nd Victoria, against several medical men, for having unlawfully used the title of surgeon, and with practising as surgeons. The case of Mr. Edwin Grayston, Great Russell-street, Birmingham, was taken first. It was proved that he appended "M.D." to his name on his door-plate, and that he advertised himself as "Surgeon Accoucheur," calling his laboratory a "surgery." It was admitted that he was not a registered practitioner, but an "M.D." diploma from the Eclectic Medical College of Pennsylvania was produced, together with certificates for midwifery from the Dublin Rotunda Lying-in Hospital and the Glasgow University.—The stipendiary magistrate (Mr. Sneyd Kynersey) held, that though Mr. Grayston could not recover fees, the Act did not prevent unqualified medical men practising, if the public were not deceived as to the nature of their qualifications. The Act stepped in only when an unregistered practitioner attempted to pass himself as a registered surgeon. Mr. Grayston was himself to act as a surgeon accoucheur, and was entitled to the word surgeon in that sense. The summons was dismissed. The other cases were adjourned.

THE NETHAM CHEMICAL WORKS.

The trial that was to have taken place at the recent Gloucester Assizes of two indictments against the Netham Chemical Company, St. George's, Bristol, for a nuisance, has been postponed by consent to the Spring Assizes of 1870, upon the company undertaking to abate the nuisance. In addition to the undertaking to abate the nuisance, the company have consented to pay taxed and additional costs. If the nuisance is not abated, the trial will take place in 1870. Among the scientific gentlemen who would have been called into the witness-box for the prosecution were Dr. Griffin and Mr. Stoddart, as chemists, and the following medical men:—Dr. Beddoe, Dr. Davies, Dr. Willett, Dr. Day, Mr. H. M. Grace, Mr. H. Grace, Mr. T. W. Fryer, Mr. Lodge, etc.

ACTION ON A PROMISSORY NOTE.

At the Rotherham County Court, on the 23rd ult., before T. Ellison, Esq., Judge, Mr. Arthur Mitchell Carr, chemist and druggist, Sheffield, sought to recover from Mrs. Eliza Thompson, of Wentworth, the sum of £20 10s., principal and interest due on a promissory note, dated August 7, 1866. It appeared that the defendant's son was apprenticed to Mr. Carr in the year 1866, at a premium of £20, of which £20 was paid at once in cash, the note in dispute being given for the payment of the balance in two years. After the boy had been in Mr. Carr's service about twelve months, some unpleasantness arose, the lad being charged with pilfering articles from his master's shop, and with otherwise causing loss to his employer. This led to an interview between the plaintiff and the defendant, at which, according to the evidence of Mrs. Thompson, Mr. Carr undertook not to press the charge against the boy, on consideration of being paid at once the amount of the promissory note for the balance of the premium. Mrs. Thompson said she at once accepted this offer, and subsequently handed over the money to the plaintiff, neglecting, however, in her ignorance of what was the usual course of proceeding in such transactions, to require the note to be given up to her. She did not find out her mistake until, much to her astonishment, the present proceedings were taken. It was denied by the plaintiff that the £20 was paid in discharge of the promissory note, but to cover the defalcations of the apprentice, and as a consideration for Mr. Carr's not dismissing him from his service. The evidence was contradictory as to the loss which the plaintiff had sustained through the conduct of the boy, the defendant stating that during the interview referred to the plaintiff said it only came to £2 or £3.—In answer to questions from his Honour, the plaintiff said he had given a receipt for the £20, and had given the defendant to understand that if the boy behaved himself during the remainder of his service, it should be considered in payment of the balance due on his indentures. His Honour, in giving judgment, said it was a circumstance that if the plaintiff gave a receipt for the money, he did not put upon the face of the document that the consideration had no reference to the balance remaining of the apprenticeship premium. He said there was a great deal which militated against the

plaintiff's version of the matter, and that he had no hesitation in saying that Mr. Carr had not satisfied the burden of proof which had been thrown upon him. He should therefore give judgment for the defendant.

A DENTIST'S CLAIM.

In the Mold County Court on the 12th ult., an action was brought by W. R. Walker, dentist, practising in Chester, against William Barclay, a farmer, residing at Bistree, near Mold, to recover the price of a set of teeth supplied by the plaintiff to the defendant. It appeared that the plaintiff, having lost his hat in the vicinity of defendant's house, called upon him to borrow a *chapeau* to enable him decently to go home. The farmer hospitably entertained his visitor, who, in return, stated that he would supply defendant with a set of teeth. After some preliminary business, and many calls, defendant allowed the artist to take an impression of his upper jaw. The upper teeth were soon after delivered, and the modest sum of £4 charged for them. Ten shillings was paid on account, but in consequence of the badness of "fit" and the teeth being of no use to him for mastication or any other purpose, declined to pay any more. Mr. Duncan, who appeared for defendant, examined plaintiff as to the cost of production, and he admitted that he had sent off to Liverpool for twelve teeth at 1s. 6d. per tooth, and some composition sold at 7s. 6d. per lb., the nature of which was a "trade secret," and proceeded to manufacture the upper set. Plaintiff also acknowledged that his charges were very low in comparison with those charged against Lord Brougham; but he was reminded that Lord Brougham had refused to pay his dentist on the same ground that defendant had, viz., that the work had not been done properly. His Honour, in giving judgment for defendant, said it was clear that plaintiff had not fulfilled his part of the contract, and hoped the case would be a warning to defendant not to employ incompetent persons.

GOSSIP.

A fire took place last Wednesday night on the premises of Mr. A. Smith, brush manufacturer, in Marsh-gate-lane, Stratford, Essex. It was caused by a high wind blowing some sparks down the furnace chimney. Two workshops and a quantity of stores were destroyed.

Messrs. Baker and Daniels, of Leadenhall-street, write to say that many conflicting reports having been circulated with reference to the quality of the guano recently imported from Peru, they think it right to state that they have lately taken delivery of a considerable parcel, which has proved equal to any guano ever imported into this country.

The *British Medical Journal* announces that the Council of the Royal College of Surgeons have accepted from Mr. Erasmus Wilson, F.R.S., the sum of £5,000, together with a fine collection of drawings and models, for the endowment of a Professorship of Diseases of the Skin. It is believed that the first series of lectures in connection with this chair will be delivered by its founder.

At the annual meeting of the Birmingham Eye Hospital, held on the 3rd inst., the report read showed that the cost of drugs and surgical appliances for each in and out patient was 10d. this year, as against 11½d. in 1868. Mr. J. D. Goodman, in moving the adoption of the report, said that, as regarded drugs, of which a very great quantity were used in Birmingham, he might say that he had made a comparison in connection with the Lying-in Hospital of the amount of drugs given in Birmingham, and found that it was just double what was given in London, and the only explanation of the matter given to him was that the people in Birmingham were so fond of drugs that they would have them.

The town of Mierthye Tydfil has fallen into the same difficulty which has entailed so much anxiety and expense to the local authorities of Cheltenham, Leamington, and other English towns, namely, what to do with its sewage. The Local Board of Health having expended £30,000 in draining the town, discharged the sewage into the river Taff, but a Chancery suit was commenced against them by Mr. Nixon, a coal owner, and an *ad interim* injunction was granted to restrain them from discharging into the river. The suit is

because it was considered most nearly to represent its real composition. Originally, it actually contained a considerable quantity of neutral citrate of magnesia, but it was found that, without some modifications, this preparation could not be kept of good colour, and now, although the name may not be chemically accurate, the real article certainly contains citric acid and magnesia, and, unquestionably, when a customer asks for citrate of magnesia, he is supplied with exactly that preparation which he requires. A few days ago, Mr. Bishop showed us the first entry in his or any other books of citrate of magnesia. Messrs. Curling and Co., of Cullum-street (now of St. Mary Axe), export druggists, were the purchasers, and the date of this entry was some time in 1857. Mr. Bishop spent no money in patenting his process, but he spent a vast deal of time and labour in perfecting it, and from that day to this he has never ceased to personally superintend its manufacture. His constant and scrupulous care has won for his preparation a reputation and a demand which are still increasing, notwithstanding the scores of makers in the market, whose goods compete with these. He informed us that during the past month of April he had produced and disposed of more citrate of magnesia than in any previous month since he has been in business, and he is now about to enlarge his premises, in order to obtain accommodation for still more trade. Before quitting Mr. Bishop, we may be allowed to mention a very elegant preparation of this, which we think is but little known among chemists—the granular effervescent carbonate of lithia. This is put up in little glass tubes, sealed, each containing, beside the effervescing and other ingredients, four grains of the salt. These offer a very ready method of carrying about in the waistcoat pocket, if necessary, an equivalent to a dozen bottles of sparkling lithia water, and their price is such that, among patients habitually taking this medicine, they would command a ready sale.

GAZETTE.

BANKRUPTS.

BAKER, E., York-place, Portman-square, surgeon.
DAVIS, E., Whitehaven, dentist.
HARDING, G. D., Ripley, Derbyshire, surgeon.
JONES, JOHN WHITLEY, Ilanellen, chemist.
KEENE, F. J., Everecreech, surgeon.
KEER, DANIEL, Welchesbury, surgeon.
MACRENNAN, J. W., Great Marlborough-stre doctor of medicine.
OAKLEY, J., Hales-wen, late chemist.
REES, T., Merthyr Tydfil, chemist.

PARTNERSHIPS DISSOLVED.

BLTYHE, BLYTHE, & Co., oil merchants, Liverpool.
COBBETT & MILLWARD, manufacturing chemists, Bradford, near Manchester.
DENNIS & BIGGIN, druggists, Stamford.
FETIE & WICKWAR, dentists, Prince of Wales-road, N.W.
FRICHTY, MONDOLLO, & MONDOLLO, manufacturers of aerated waters, Little James-street, Bedford-row.
NICHOLSON & WIGGINTON, wholesale druggists, Stanhope-street, Euston-road.
REYSELE, GORDON, & GORDON, tar distillers, St. Lawrence, Newcastle-on-Tyne.



WHITE GUTTA PERCHA.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—Mr. Harry Napier Draper, in an article on "White Gutta Percha," published in your last, refers to a paper of mine on the same subject, read at the Norwich meeting of the Pharmaceutical Conference, and states that the process I then recommended had been patented by Dr. Cattell in 1859. I am obliged for this information, of which I was ignorant. On reference to the authority named by Mr. Draper, however, I find no mention of the means I used to recover the chloroform; and indeed Dr. Cattell seems to advocate the use of benzol as a solvent, using a small quantity of alcohol "to precipitate the colouring matter." Mr. Draper says, "Both Dr. Cattell and Mr. Bengier seem to have overlooked the fact that the colouring matter of gutta percha is insoluble in benzol, chloroform, and sul-

phide of carbon, and that the alcohol of the specification aids, if at all, by diminishing the specific gravity of the solvent." Mr. Draper cannot mean exactly what he says, as I recommended this colouring matter to be separated from the chloroform solution by filtration; and as to Dr. Cattell's theory of the retrograde of his process, I can scarcely be made jointly responsible for that. If Mr. Draper means to say only that I was ignorant of the power of sulphide of carbon to dissolve gutta percha, he is mistaken. I made similar experiments to those recorded by him, but the difficulty of entirely removing the smell of this solvent when operating in a small way, and the fact that the films though delicately white as films did not without the greatest care yield a white mass when softened and pressed together, led me to regard the other as the better process.

With regard to the difficulties attendant on the carrying out of this process, I am surprised that so practical a man as Mr. Draper should be frightened at them. There need be very little loss of chloroform, and he must be an unpractical man indeed who finds much difficulty in separating five pints of spirit of wine from five pints of water, or, at any rate, in rectifying the spirit sufficiently to be used again for a similar purpose. The only maker of absolutely pure white gutta percha with whom I am acquainted charges 30s. per oz. for it. The process I recommended, however clumsily carried out, will leave a wide margin of profit compared with buying at that price. It is not much to the credit of a large and well-known firm, in which we have been taught to trust, that it should send out a mass of oxide of zinc, rendered solid by a solution of gutta percha, and bearing on the label no ambiguous title which may mean anything, but the words, "Pure White Gutta Percha." It was to call attention to this, and suggest what appeared a practical process, by which every retail chemist could prepare the article pure for himself, that the note was read at Norwich.

I am, Sir, yours obediently,

F. BADEN BENGER.

1, Market-place, Manchester, May 6.

ASSISTANTS AND THE NEW PHARMACY ACT.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—Will you kindly give me space in order to call the attention of your readers to the fact that on the 29th inst. the House of Commons will be called upon to consider certain amendments in the Pharmacy Act of 1868. That will be the only opportunity, perhaps, of bringing before the notice of Parliament the hardship of the case of assistants and apprentices. An effort should then be made to induce the Legislature to relax somewhat the harsh provisions of its late Act with regard to assistants and apprentices. Petitions should be forwarded, and members communicated with, requesting them to support the prayer of the petition, that all assistants and apprentices who had been connected with the business five years should be allowed to commence business without examination.

I remain, yours respectfully,
Manchester, May 5.

J. T. SLUGG.

WHOLESALE ASSISTANTS AND THE MODIFIED EXAMINATION.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—A letter appeared in your columns of last month from a "Registered Student of the Pharmaceutical Society," to which, with your permission, I will reply.

The writer of that letter does not express his ideas very clearly, but he proves very clearly his ignorance of the subject on which he writes, and as clearly fails to prove the injustice of allowing wholesale assistants to avail themselves of the Modified Examination. As one better acquainted, probably, with the wholesale trade than your correspondent, let me inform him that there is not a movement being made to petition Parliament respecting wholesale assistants, but that a petition was sent by them to the Privy Council in January last, the prayer thereof being, not that any porter with a slight smattering of the business,

or who had swept a warehouse for three years, should be enabled to style himself "chemist by examination," but that all wholesale assistants who for any three years previous to the passing of the Pharmacy Act had been employed in dispensing in open shop the prescriptions of legally qualified medical men, should be eligible for the Modified Examination.

As your correspondent is evidently ignorant of the fact, it may be well for him to learn that, in addition to porters, there are in wholesale houses men who, like himself, have served an apprenticeship in the retail, paid a heavy premium, and spent both time and money in acquiring a thorough knowledge of their business, and though they do not deem these considerations such as to warrant them in laying claim to the lofty honours due to a registered student of the Pharmaceutical Society, they do deem them such as may warrant their petitioning for the right of admission to the Modified Examination.

Let us hope that a "Registered Student" will display a better knowledge of the subjects for examination (when he appears before the Board) than he does of the matter on which he has addressed you; otherwise, it is to be feared he will wish the sieve for letting through rubbish were made a little larger.

Yours, etc.,

London, May 5.

A WHOLESALE ASSISTANT.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—Your correspondent, "A Registered Student," evidently knows nothing of the wholesale trade, or he would not assert that any porter who has swept a warehouse for three years could pass the Modified Examination, which includes the correct translation of Latin prescriptions, detection of unusual and improper doses, etc. "A Registered Student" should remember that there are hundreds of young men who have served a five years' apprenticeship, and spent quite as much time and money in the retail trade as himself, who have been during the last three years in wholesale houses, acquiring a knowledge that no amount of training in first-class retail establishments could give them.

It will be only an act of justice to these young men to strike out the word "immediately" in Schedule B of the new Act; and it is this which is now sought to be done, and of which your correspondent complains; and then the candidate for examination must have been for three years engaged in dispensing medicines, which proviso will be quite sufficient to exclude wholesale porters. It may be said, that the minor examination is open, and that assistants who have had experience in both wholesale and retail ought to be able to pass it; but this is not the grievance. The question is, whether a young man, who has "thoroughly" qualified himself for the trade—I beg pardon, profession—by becoming acquainted with the quality of drugs as well as their uses, should be put to any more expense in passing an examination than the man who rests his whole claim on being able to dispense a prescription correctly, with little or no knowledge of the value of the ingredients he puts together.

I am, Sir, your obedient servant,

AMATOR JUSTITIE.

FAVoured DISPENSERS.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—I lately accompanied a gentleman to the house of a well-known physician in the West-end of London, to whom I had myself recommended my friend, and was present at the interview between doctor and patient. A third party could not fail to be struck with the skill manifested by the eminent gentleman in ascertaining in a few minutes the causes of complaint, and in the strong common sense which he applied to the removal of these. I forbear to mention his name, because my present object is not to advertise him to the public, but to reveal his system to the trade, and I therefore venture to describe to you and your readers, with your permission, the conclusion of the consultation. He was silently and thoughtfully occupied in writing a prescription for the invalid, which appeared to require much concentration of attention, although, from my little expe-

rience, I might venture a small wager that a thousand lithographs of the same document would not be a very heavy stock-in-trade for that establishment. Suddenly it appeared to occur to the worthy doctor that it was very improbable that the elaborate combination of medicines which he was prescribing was at all likely to be obtained in anything like purity in any provincial town. For a few moments this difficulty seemed to occasion some concern to both parties, but fortunately the doctor was equal to the emergency, as he at that moment recollected an establishment (that of a high-class West-end firm) which, as he somewhat more than hinted, was about the only place where strict accuracy could be relied on, or where one could be certain even of obtaining the drugs ordered.

The physician almost too earnestly entreated us to patronise that establishment, which of course we did, and it was pleasing to see how well the chemist's assistant understood his part in the solemn farce, he intimating something about a special preparation of their own being one of the ingredients. The prescription consisted of "dinner pills," composed only of Pil. Aloes Dil. and a mixture containing Ammon. Sesquicarb., with Tinct. Cinchona. It is fair to add, that while the price charged for the medicines was sufficient, it was not exorbitant, although I was quite prepared for such a climax. Can you help me, sir, by advising me of some London doctors to whom I can recommend my customers when they wish it, and who will be likely to prescribe something which can be comprehended and compounded by

Your obedient servant,

May 1, 1869.

A COUNTRY CHEMIST.

HAIR WASHES.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—In this part of the country a great outcry has been raised against the use of hair washes, especially Allen's, Rossiter's, and others, supposed to contain acetate of lead. The *Lancet* and other medical papers first sounded the alarm, and here the local press has caught the mania, and the result is, that scarcely any of these, or even of the most simple applications for the hair, can be sold. For us to sell really injurious preparations, for this or any other purpose, would be to disgrace and injure our reputable calling. But before we ourselves raise such an outcry, ought we not to be fully satisfied that there is some necessity for it? It does not appear that any of these preparations which really do contain acetate of lead have more than twenty grains to the pint, and every chemist must be aware that this preparation of lead is constantly used by the public in every variety of strength up to twenty times this degree, and applied to every part of the skin, the eyes, and even to large open wounds, without any such destructive effects as have been assigned (I believe without proof) to the preparations in question. Should we not wait for at least one case of injury before these preparations are utterly condemned? Nay, if even one solitary case could be produced, would that require anything more to be done than a cautious and judicious use. On this principle, almost every preparation we deal in may be utterly condemned, for there is scarcely one which has not in some particular case proved injurious. With regard to the application of acetate of lead to an unbroken surface, or even to an open wound, in the strength these preparations contain it, after nearly half a century's experience of its use, I believe it to be as safe as any preparation in the Pharmacopoeia, and, without denying the possibility of absorption, I believe the risk is no greater than what is every day encountered with numerous others of our ordinary outward applications.

I am, Sir, yours respectfully,

A PHARMACEUTICAL CHEMIST.

Southwell.

A GROWL FROM THE ANTIPODES.

TO THE EDITOR OF THE CHEMIST AND DRUGGIST.

SIR,—I have no doubt you have been inundated with communications respecting "The Amended Pharmacy Act,"

but I hope that will not prevent your inserting this out of justice to myself and fellow-members of the trade in the colonies.

"I wish to know if I am entitled to be registered as a 'chemist and druggist,' and will, as briefly as possible, state my case. In 1859, I commenced learning the business under my father's tuition, remained with him till 1860, came to London, and in July of that year passed the assistant's or dispenser's examination at the Apothecaries' Society, in my certificate of which the Court of Examiners—consisting of the following gentlemen, viz.: William Dickinson, W. P. Brodribb, Richard H. Robertson, Robert Norton, Richard King, J. Peregrine, Robert H. Semple, Wm. G. Thistlethorn Dyer, Charles Taylor, Thomas R. Wheeler, Henry Mortimer Dyer, John Randall, Alfred M. Randall—pronounced me duly qualified to 'compound and dispense medicines.' From that time until October, 1864, I was engaged as dispenser to several firms in the West-end of London, the last year under the worthy president of the Pharmaceutical Society—G. W. Sanford, Esq. I then came out here, and after managing a business for a few months, I eventually settled down as a 'chemist and druggist' in September, 1865.

Now, after eleven years in the trade, three of which I have spent in business as a dispensing chemist on my own account, I find that unless a more liberal interpretation is put upon the Act than at present, should I return to Great Britain, I should be under the necessity of passing the minor examination at the Pharmaceutical Society, and pay a fee of £5 5s. before being allowed the liberty of following the business which I am now doing, and which I should have been allowed to do if I had only stayed in England.

This last is the sole reason why I am excluded, and I think you would be doing an act of justice to many members of the trade if you would assist me in showing up the inconsistency of the Act in this particular. I have sent to the registrar my claims to be registered first as an assistant; but in that case I am shut out by the peculiarity of the Act that an assistant must be engaged for three years immediately preceding the passing of the Act as a dispenser, whereas chemists and druggists are entitled to be registered if at any time in business prior to the passing of the Act. Is there any reason for this distinction? I claimed also, and sent certificates duly signed, under Schedules C and D; but I was not in business in Great Britain, and therefore am excluded on that account.

My only claim as the Act stands at present seems to lie in the peculiarity of the wording of the Act in Clause 3, in which it says that 'chemists and druggists within the meaning of this Act shall consist of all persons who,' etc., and also 'of all such persons as may be duly registered under this Act.'

Now, to put a liberal construction on the wording of this clause would be the means of allowing the claim of myself and many others who could show to the satisfaction of the Council of the Pharmaceutical Society that they are duly qualified, and may be duly registered under this Act.

Should this not be the intended interpretation, I can only suggest for the consideration of the Council another means of remedying this great defect, viz., that a clause be introduced in the Act empowering the presidents and councils of the Pharmaceutical Society of the various colonies to act as boards of inquiry into the rights of chemists and druggists in business in the colonies to claim to be registered, and, by communicating with the medical practitioner signing Schedule D, in every instance test the genuineness of the claim. I think that, in the absence of a better plan, this may be adopted without any fear of admitting unqualified persons, and on the other hand it will show that an Englishman's rights are equally respected whether he remain in Great Britain or try his fortune in the most distant part of her possessions.

Apologising for taking up so much of your space, I beg to remain, Sir,

Yours etc.,
E. L. BAILEY.

Williamstown, Victoria, Australia,
January 4th, 1869.



P. F.—We believe the preparation you inquire about to be a tincture of chiretta, but as we have never examined any of it beyond the wrapper, we cannot tell you the strength, nor whether other ingredients are contained in it.

An Old Subscriber.—No certificates were sent by the Registrar, only an acknowledgment of the receipt of the declaration. You will be able to ascertain from the published list very shortly if your name is duly entered.

C. and D. (Liverpool).—This correspondent sends us two samples of Lin. Saponis, made with different soaps, but both with a similar result. C. and D. is quite right in assuming that Lin. Saponis should be "a clear, bright liquid," and if made with the proper ingredients, and according to the directions given in the B. P., it certainly would be. The two samples referred are both solid. This must arise from one of three causes. Either too much soap was used, as was the case in the form prescribed in P. L., 1836, or the oil with which the soap was made was not pure olive oil, or too great heat was employed to hasten the solution. It will be remembered that a few months ago Messrs. Southall, of Birmingham, advertised in this journal Sapo Duri, B. P., which would make a clear liniment at 32°. We received from them a small sample of this soap, the mere appearance of which was sufficient to satisfy one of its purity. On a Saturday night we made a liniment with this, following exactly the directions of the Pharmacopoeia, and on the Monday morning everything was perfectly dissolved, and filtration only was necessary to produce a liquid perfectly clear and bright.

J. R.—Most of the fly-papers are arsenical. We have been told that some are prepared with the tincture of pyrethrum roseum, but we doubt the correctness of this statement.

HELMSEY'S HAIR RESTORER.—Mr. Robinson, of Scarborough, the agent for this preparation, has pointed out a misprint in an editorial note last month. Mr. Robinson observed that the appellation was "beneficial for the hair," but we made him say it was only beneficial for the time. It appears we erred in describing him as the manufacturer of "Helmsey's Restorer."



[The following list has been compiled expressly for the CHEMIST AND DRUGGIST by L. de Fontainemoreau, Patent Agent, 4, South-street, Finsbury, London; 10, Rue de la Fidélité, Paris; and 33, Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted to the following:—

- No.
3893. W. E. Gedge, of Wellington-street, Strand. A novel bituminous composition, termed "Resinous Bitumen." Dated 21st December, 1868.
439. H. B. Binks, of 41, Cleveland-road, Southgate-road, Islington. Improvements in the manufacture and application of indigo, carmine, and other colouring matters, and bleaching agents. Dated 12th Feb., 1869.
761. E. F. K. Lucas, of Middlesbrough-on-Tees, Chemist. Improvements in the manufacture of soluble phosphate of lime and of phosphatic manures. Dated 12th March, 1869.
819. C. F. Clave, of Middlesbrough-on-Tees, Chemist. Improvements in the manufacture of carbonate of potash and the recovery of certain products evolved therein. Dated 17th March, 1869.
847. J. Hamilton and R. Paterson, both of Glasgow. Improvements in apparatus for containing, treating, preserving, cooling, withdrawing, and conveying fermentable and aerated beverages. Dated 20th March, 1869.

- No. 875. A. Clark, of Chancery-lane. Improvements in machinery for rubbing and mixing paints, chemicals, fertilizers, and other substances. Dated 22nd March, 1869.
881. L. A. Israel, of 1, Crescent, Minorities. Improvements in the mode of, and machinery or apparatus for, manufacturing sulphuric acid. Dated 23rd March, 1869.
886. J. Horsley, of Cheltenham, Gloucester, Chemist. Improvements in protecting nitro-glycerine for conveyance and storage. Dated 23rd March, 1869.
924. G. Dymond, of Birmingham, Manufacturing Chemist. A new or improved baking powder. Dated 27th March, 1869.
939. W. R. Lake, of Southampton-buildings, Chancery-lane. Improvements in the manufacture of soda and potash. Dated 29th March, 1869.
1021. W. Johnson, of the Elms, Sketty, Swansea, South Wales. An improvement in machinery for compressing the carbonaceous, resinous, or other combustible substances employed in the manufacture of compressed fuel, which improved machinery may also be employed in moulding clay and other building materials. Dated 5th April, 1869.
1032. J. Sterriker, of Great Driffield, York, Chemist. Improvements in pressing apparatus for expressing oils and other matters from seeds or other similar substances in which those matters are contained. Dated 5th April, 1869.
1059. W. H. Balmain, of St. Helen's, Lancashire. Improvements in the preparation of certain oxidising agents, and the use of such agents for the preparation of chlorine for bleaching, for yielding oxygen, and for other useful purposes. Dated 7th April, 1869.
1060. L. Mond, of Farnworth-within-Widnes, Lancashire, Chemist. Improvements in utilising products arising from soda and potash waste. Dated 7th April, 1869.
1103. E. C. C. Stanford, of Glasgow, Manufacturing Chemist. Improvements in applying, treating, and utilising materials for deodorising solid, liquid, and gaseous matters. Dated 10th April, 1869.
1187. H. W. Dee, of Sherwood-street, Golden-square, Manufacturing Jeweller. Improvements in making bottles, jars, and similar articles air and liquid tight. Dated 17th April, 1869.
1224. M. Henry, of Fleet-street. An improved mode of obtaining pyrophosphate of lime. Dated 21st April, 1869.

Letters Patent have been issued for the following:—

3119. N. Smith, of Glasgow. Improvements in treating and utilising waste acid liquors. Dated 12th Oct., 1868.
3235. T. Carr, of Richmond-road, Montpelier, Bristol, Engineer. Improvements in or applicable to machinery for disintegrating or pulverising minerals, ores, clays, chemicals, artificial manures, and various other substances and articles of manufacture, and for mixing or separating various materials, and for dispersing fluids, semi-fluids, and molten metals, to facilitate or produce chemical or other changes. Dated 22nd October, 1868.
3238. R. Dowling, of Exeter. Improvements in bottles, particularly intended for containing poisons, and in stoppers for the same. Dated 23rd October, 1868.
3653. W. Betts, of Wharf-road, City-road, Capsule Manufacturer. Improvements in the manufacture of capsules for bottles, jars, and similar vessels, and in apparatus employed therein. Dated 1st December, 1868.
3928. A. V. Newton, of Chancery-lane. Improvements in treating cod-liver oil and other oily or fatty matters, to render them acceptable to the palate. Dated 23rd December, 1868.

Patents which have become void:—

813. B. Fleet, of East-street, Walworth, Soda-water Manufacturer. Improvements in apparatus for manufacturing and bottling soda-water. Dated 24th March, 1862.
863. C. E. Amos, of the Grove, Southwark, and W. Anderson, of Erith, Kent, Engineers. An improved mode

- No. of treating waste liquors, for the dissipating or utilizing of the same. Dated 23rd March, 1866.
927. R. Hineson, of Manchester, Merchant. An improvement in aerated waters. Dated 31st March, 1866.
1009. B. F. Weatherdon, of Chancery-lane. Improvements in treating lucern root for paper making and weaving purposes, as well as in abstracting soda, salts, and colouring matters therefrom. Dated 9th April, 1866.
1035. W. Clark, of Chancery-lane. Improvements in apparatus for drawing off aerated liquids. Dated 11th April, 1866.
1049. A. Swann, of Kirkcaldy, Fife, Manufacturer. Improvements in apparatus for evaporating or recovering lees. Dated 13th April, 1866.
1108. G. Lunge, of South Shields, Durham. Improvements in the manufacture of carbonates and bicarbonates of soda and potash. Dated 20th April, 1866.
- Specifications published during the month:—
(Postage 1d. extra.)
2647. A. E. Borgen. Treating fatty substances to obtain stearine. 4d.
2674. E. Richardson. Material for covering bottles. 4d.
2708. J. Adams and H. Barrett. Stopper for bottles. 8d.
2725. J. H. Johnson. Blue colour. 4d.
2729. A. M. A. Laforgue. Applying medicinal powders. 10d.
2703. A. R. Stoecker and J. A. Edgley. Hollow caps and stoppers for bottles, &c. 1s.
2775. J. Adams and H. Barrett. Supplying syrup to aerated beverages. 10d.
2793. J. Oliver and C. O. McAllum. Utilising saline salts of residual liquors. 4d.
2805. G. Bischoff, jun. Precipitating copper. 8d.
2820. F. Seebohm-Ulitzon. Apparatus for generating carbonic acid. 8d.
2856. J. B. Spence and R. R. Kelly. Pigments. 4d.
2857. W. Betts. Capsuling bottles, &c. 10d.
2940. I. Baggis. White lead. 4d.
2959. P. Spence. Copperas. 4d.
3383. J. Sturrock. Metallic caps for bottles, &c. 6d.

Varia.

TREATMENT AND PATHOLOGY OF HOOPING-COUGH.

Professor Oppolzer, in the *Wiener Medizinische Presse*, No. 36, 1869, states that, in the treatment of hooping-cough, he prefers before other narcotics the powdered belladonna-root. This is administered to patients from one to two years of age, in doses of five milligrammes, gradually increased to one centigramme. The powder is given twice in the day, in the morning and evening. For adults and intelligent children, Oppolzer prescribes a solution of bicarbonate of soda, to be taken in small quantities whenever an attack of coughing is threatened. Emetics are not given until the third stage of hooping-cough, when the respiration is impeded by great accumulation of mucus in the bronchi. In this last stage, astringents, particularly tannin, are administered. The patient should be isolated, and kept in a warm room with a constant temperature. Change of locality frequently brings about a great and permanent amelioration in the frequency and intensity of the paroxysms. Oppolzer holds that hooping-cough is due to the action of a contagium carried in the sputum and exhalations of patients similarly affected. This view is supported by the fact that, among adults, females are more frequently attacked than males; and weakly, strumous, and phthisical children are more disposed to the malady than those who are strong and healthy. In accordance with this view, Oppolzer recommends isolation of patients suffering from hooping-cough.—*British Medical Journal*.

CHILIAN CIVILIZATION.

A short time ago, the Government of Chili sent over a large collection of works published in that country, as a present to the Institut de France; and last week M. Gay read a report on the subject to the Academy of Sciences. After briefly reminding his hearers that sixty years ago Chili, kept under the most repulsive vassalage by Spain,

that shut her out from the rest of the world by closing her ports and monopolising her trade, threw off the yoke, and after suffering all the evils of revolution, at length, in 1830, gave herself up to the guidance of Don Diego Portales, M. Gay proceeds to sketch the rapid progress made by the country in all the arts of civilization. Since the war of independence, her population has been doubled, and her exports are larger than her imports. Her silver mines are now worked on an improved plan: that of Chanarillo alone has, in the course of thirty-five years, produced upwards of 500 millions of francs; and her copper mines are so prolific that they could provide the whole world with copper, were the business sufficiently remunerative—even now they produce 36,000 tons, about one-half of the quantity annually consumed all over the globe. Public instruction is highly developed: in 1864 the number of girls' schools alone was 1,070, with 50,747 pupils; they cost the Government 1,766,175 francs a year. Every province has a lyceum, the professors of which have all pursued their studies at the Institute of Santiago, a college for the higher branches. The university, which had been suppressed in 1813, was reopened under an improved form in 1843. It annually publishes a considerable number of volumes on the history and legislation of Chili, as also on other matters. Government contributes largely towards the expense of these publications. At the beginning of the present century the exports of the country did not amount to more than 15 millions of francs, while it now attains the enormous sum of 281 millions. The last census showed the population to be 1,819,223 souls; but this is far below the truth, it being very difficult to obtain the exact numbers in a thinly-peopled country, the extent of which is 2,200,000 square kilometres, 78,912 only being under cultivation. Taking the latter figures only, the ratio of the population to the arable soil is about 23 persons per kilometre.—*Galignani*.

COPPER AT THE CAPE OF GOOD HOPE.

The first discovery of copper in Kafirland was in a part of the Inisizwa Mountains, at a point about twelve miles from the southern boundary of Natal. The mountain itself has an area of about 100 square miles, and is situated on the right bank of Umzimkulu, a branch of the Umzimvubu. The mine is not more than 80 miles from Port St. John, and the road between the two places could be easily made good throughout. About ten miles to the south-west of Inisizwa there is another mountain of the same character, which is said to contain copper. This mountain is also near the same feeder of the Umzimvubu. When Dr. Sutherland, Surveyor General of Natal, visited the mines, the quantity of ore excavated was about one-quarter of a ton, all taken from the surface. By the aid of natives the main vein was laid open, and traced into a mountain to a distance of eleven feet. This vein is about eighteen feet thick by two and a half feet in depth. The ore is replaced by a yellow ochreous deposit, containing nodules of very pure carbonate of copper or malachite, varying in size from a pea to masses of ten or fifteen pounds weight. At a vertical height above the vein masses of ore are found very different from that in the vein itself. The ore varies in quality, the chief impurities being iron and clay. In one section of the rock there is a perceptible infiltration of carbonate of copper, filling all the fissures in the lines of cleavage. This has been traced to a depth of one foot. A party of miners from Durban subsequently carried the excavations seventeen feet further into the mountain, when the vein was again struck, and ore of superior quality obtained. Portions of considerable masses have been found to contain as high as 56 per cent. of metal, and others from 15 to 25 per cent. The mines are in Faku's territory, the Inisizwa mountain being, however, occupied by the petty chief Jojo. It is this fact which makes it difficult for the Natal or Cape Government to move in the matter. The per centage of copper is put down at 20.50 per cent. Silver was found to the extent of 5.30 ounces per ton. A trace of gold was also detected. The value of the ore was placed at 14s. 6d. per cent., or £14 17s. 3d. per ton of 21 cwt.

ADULTERATION OF SEEDS.

Efforts are being made by those interested in the seed trade to obtain some additional legislation in reference to it. There are great complaints of the admixture of killed

German rapeseed with English turnip seed, which it resembles in appearance, and also of the killing and colouring of inferior and cheap clover seeds and trefoil for the purpose of adulteration. There is already a law in force which provides a remedy for any person who purchases seeds and sustains a loss thereby, the vendor being made responsible; but this is not considered sufficient, and great dissatisfaction exists on the subject. A Bill has accordingly been prepared with the view of repressing the practice of adulteration. It provides that killing or dyeing seeds shall be an offence punishable by a fine not exceeding £50 and costs. Seeds are killed by several processes, such as steaming, scalding, baking, drying in kilns, etc., any of which destroys its vitality. They are coloured by dyeing, sulphur-smoking, and other means, with the object of mixing undetected with seeds of a different kind and colour. It is at once evident that such practices, if they prevail to any extent, must be most detrimental to the agricultural interest, and it is only reasonable that the cultivator should be protected against them by law. For a second offence it is provided that the Court shall have the power, besides inflicting the fine, to order the publication of the offender's name, occupation, and place of business by the informant or prosecutor. The offender may be prosecuted under the Petty Sessions Act or before a metropolitan stipendiary magistrate, and in cases where the fine shall exceed £5, he shall have the right of appeal to the quarter-sessions. No summary conviction under this Act shall be quashed for want of form, or be removed by *certiorari* or suspension into any superior court, and its provisions shall not affect the remedy by civil process which the person aggrieved has under the Act already in existence.—*Chamber of Agriculture Journal*.

ANTIDOTE TO PHOSPHORUS.

The value of essence of turpentine as an antidote to the effects of phosphorus has long been recognised in Paris as well as in London, and M. Personne, apothecary at the Hospital of La Pitié, has brought the question before the scientific world by a series of experiments upon dogs; he has found that in all cases in which turpentine has been administered to the animals a few hours after they had taken phosphorus they exhibited symptoms of intoxication, but recovered; whereas when turpentine was not given they invariably died. In other cases in which turpentine was given immediately after the phosphorus, the animals were scarcely made ill at all.—*Jour. Soc. of Arts*.

LEECHES.

Paris is the best market in Europe for leeches. The mouth of the Danube is now the best fishing ground, and no less than £120,000 in value of leeches are annually sent to Paris from Trieste. The best leech is said to be a native of Australia, as he does his work in a shorter time than any other. The Viceroy of Egypt has granted a monopoly of 3,000,000 leeches annually, which are to be found in the bed of the Nile after the periodical inundation of that river, to a French dealer. On arriving in Paris, those not required for active duty are sent to Gentilly, where they are lodged in reservoirs provided with greasy mud and filled with greenish water.—*Jour. Soc. of Arts*.

SOUP BREAD.

Last year's growth of wheat is so good that the bakers have found it possible to admix with their best flour a certain proportion of aged inferior stuff, and some, carried away by cupidity, have used too much of the old and too little of the new, and the result is that such bakers are providing their customers with sour bread. "Sour" is not perhaps the proper designation, for the best bread will become sour if kept in a close damp place for a short time; but the proper term should be "mildewed" bread, for the flavour of the article is that of mildew, and that flavour is to be attributed to the use of mildewed flour, which is not only unwholesome, but poisonous. Of course 10,000 bakers will lift up their hands against the accusation, and cry, as boys caught in mischief would, "We have not done it." Well, a general accusation can only be of general and not particular application; but it is a fact, nevertheless, that a considerable quantity of bad flour is now being used up without any reduction being made in the price of bread containing it, or

any such honest avowal as a trader might make, both in justice to himself and his customers. We do not know if sanitary inspectors, analytical chemists, or Lynch law would do much to check this fraudulent procedure, but if it does not meet with a check we shall soon see the effects of it in the bills of mortality, and the Registrar-General will have to chronicle some new form of gastritis or fever as the result of the eating of sour bread. If some spirited individual would look into the matter, and institute a test prosecution, some good might result, but it is scarcely likely that the cupidity of the offending bakers will be cured by anything short of the hanging of one of their number. It would not be the first time that, in order to keep the fraternity in order, society found it necessary to hang a baker.—*City Press*.

TRADE REPORT.

AN almost uniform dullness has been the prevailing characteristic of all the markets which it falls to our lot to report during the past month. During the present year, we do not recollect such a continuance of inactivity, almost entirely unrelieved by any stir of orders or speculation. Although prices have not materially altered, their general tendency has naturally been to decline, and at Mincing-lane, in all departments, sellers are more easily met with than buyers. It might be expected that the time had arrived for a renewal of that confidence which is so essential to a brisk business, and yet there seems a singular, not to say unreasonable, pertinacity in the apprehensions which commercial and monied men still entertain. It is true that returns show a fair average amount of business being done, but even this would appear as if done under protest. In America, Mr. Sumner has done his worst to maintain this kind of feeling; but in justice to English discrimination, it must be admitted that his violent speech has not apparently greatly affected our money and other markets, which are the most sensitive barometer to indicate the state of public feeling; though we sincerely trust his curious calculations may not be endorsed by other statesmen of greater national influence. To return to our own markets, however, we call attention first to the following notes by Mr. W. Caudery on the transactions of the past month in

CHEMICALS.*

Mr. Caudery writes: "The trade of the past month has been very limited, and prices for most articles have still further declined, and the market closes in an unsatisfactory position.

SODA.—Crystals were difficult to sell all through the month, and although quoted during the first three weeks at £4 2s. 6d. ex ship, less was accepted; in fact, it is now freely offered at £4, and there are but few buyers. For Ash, the demand again subsided, and it is now difficult to sell even at 1½ per cent. per cwt. landed. Bicarbonate still met with little inquiry, and being pressed on this market, price gave way to 10s. 3d. landed. Caustic remained steady but quiet, at 14s. 9d.

BLEACHING POWDER declined to 10s. 3d., and even at this quotation it was difficult to effect sales.

ACIDS.—Tartaric acid drooped, makers, however, being firm to their quotations of 1s. 2½d. for crystals, and 1s. 3d. for powdered, but second-hand parcels were offered at less money. Citric remained quiet during the early part of the month, but at the close there was more inquiry, and price advanced to 2s. 7½d. Oxalic was in fair demand at 7½d. to 7½d.

CREAM OF TARTAR was rather easier, but still there was a good inquiry; business done was at about 89s. for firsts.

SULPHATE OF QUININE.—Pelletier's very quiet, at 5s. 2d. to 5s. 3d.

POTASH.—The demand for Bichromate was again active, and sellers were enabled to obtain 5d. per lb. nett money;

* Mr. Caudery's report on the chemical markets is written expressly for this journal.

in fact, at the close of the month it could not be bought thereat, although this remained nominal quotation.

REFINED SALT-PETRE has declined to some extent, closing quotations being 26s. to 26s. 6d.

SULPHATE AMMONIA lower, 16s. 3d. accepted for best white.

SULPHATE COPPER also easier, present quotation 24s. 3d.

SUGAR LEAD.—42s. per cwt. easily realized for best white."

The following is also a summary of Messrs. William Cook, Jun., and Co., of Newcastle. They state: "We can only report increased depression as regards chemicals. Deliveries have not been taken as expected, and makers have been forced almost to accept the best terms buyers were willing to offer."

DRUGS.

A rapid rise has taken place in the value of **VANILLA**, which for the best quality brings nearly double the price at which it was quoted in our last. **QUASSIA** has also advanced. **PERUVIAN BARKS** are without change, and no more than a steady demand has been experienced. **BERGAMOT** is lower, and **CASCARILLA** and **ANISEED** have also declined. The trade in **OPUM** and its preparations has been very flat. Prices at the auctions have varied from 15s. to 43s., and the lower qualities have been more freely offered and sold.

The *New York Druggists' Price Current* reviews the history of an effort made there by some speculators to "operate" on camphor, in order to bring it to a fictitious value, in the same manner as they succeeded in doing lately with opium, which in New York was forced to a considerably higher price than it reached in this country. It seems the report was industriously circulated in the most private manner possible, which as we all know is the best means of spreading a report, that the stock in London was quite insufficient for the requirements of this country, and that as neither China nor the high seas were over-weighted, London merchants must of necessity go to the United States for their supplies. And to give colour to this mythical assumption, a thousand cases were actually shipped for London. Our transatlantic contemporary, however, shows that the stocks both there and here are unusually large, and that the probabilities are, if the law of supply and demand is allowed to govern, in favour of a decline rather than an advance.

The following, from the same journal, reflects the state of the New York drug trade:—"The New York drug market throughout the past week has been very quiet; the pressure of the money market being the principal cause of the general stagnation of trade. About this time of the year, the opening of the navigation, and the spring weather, act beneficially upon the trade in general; but this year business has been almost at a standstill, and all the prospects of a prosperous spring trade, so generally anticipated, seem to vanish with every day. The orders from the West are unusually light, and so far very few buyers from that region have made their appearance in our midst."

From Calcutta we have very little change to note. **CASTOR OIL** is selling for shipment rather lower, and **SALT-PETRE** is also declining.

DRYSALTERIES.

The tone of the market for dyewoods has become almost stereotyped. It may be described as logwood first, all the rest nowhere. The demand for good qualities of **LOGWOOD** is constant and considerable. Most of the other woods are dull of sale. Some large quantities of **COCHINEAL** have been put up to auction, but the demand was not great, and only a small proportion passed off. **CUTCH** is in moderate request. On the 12th inst., at some large **INDIGO** sales, the average prices obtained showed a decline of 4d. to 6d. from the February rates. Various prices have been obtained for **GUM ARABIC**, owing, not to altered rates, but to the variety of qualities offered.

OILS.

OLIVE has met with no increased demand during the month, but has maintained the last quotations, and the market closes rather firmer. There has been some demand for **WHALE OIL**, and anticipated arrivals have sold at fair prices. **COD** and **SEAL OILS** have also slightly advanced, but **SPEERM OIL** is 2s. lower.

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mining here for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.]

CHEMICALS.	1869.			1868.		
	May			May		
ACIDS—						
Acetic.....per lb.	s. d. 0 0 0	s. d. 0 0 0	s. d. 0 0 0	s. d. 0 0 0	s. d. 0 0 0	s. d. 0 0 0
Arsenious (see Arsenic)						
Citric.....per lb.	2 7 1	0 0	2 5	0 0	2 5	0 0
Nitric.....	0 5	0 0 54	0 5	0 0 54	0 5	0 0 54
Oxalic.....	0 7 5	0 0	0 8	0 0	0 7 5	0 0
Sulphuric.....	0 0 0	0 1	0 0 0	0 1	0 0 0	0 1
Tartaric crystal.....	1 2 3	1 3	1 1 4	1 2 3	1 2 3	1 3
powdered.....	1 3	1 3 4	1 1 2	0 0	1 3	1 3 4
ANTIMONY ore.....per ton	280 0 0	300 0 0	260 0 0	280 0 0	280 0 0	300 0 0
crude.....per cwt	25 0 0	26 0 0	23 0 0	0 0	25 0 0	26 0 0
regulus.....	48 0 0	49 0 0	45 0 0	0 0	48 0 0	49 0 0
star.....	48 0 0	0 0	45 0 0	0 0	48 0 0	0 0
ARSENIC lump.....	16 0 0	16 0 0	16 0 0	16 0 0	16 0 0	16 0 0
powder.....	7 9 0	8 0 0	7 3 0	7 6 0	7 9 0	8 0 0
BRIMSTONE, rough.....per ton	165 0 0	0 0	132 6 0	135 0 0	165 0 0	0 0
roll.....per cwt	12 0 0	0 0	10 3 0	11 0 0	12 0 0	0 0
flour.....	14 0 0	14 0 0	14 0 0	14 0 0	14 0 0	14 0 0
IODINE dry.....per oz.	0 0 3	0 0 0	0 9 0	0 0 3	0 0 3	0 0 0
IRON BLACK, dry.....per cwt.	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
MAGNETA, calcined.....per lb.	1 6	0 0	1 8	0 0	1 6	0 0
MERCURY.....per bottle	137 0 0	0 0	137 6 0	0 0	137 0 0	0 0
MINIUM, red.....per cwt.	30 0 0	21 0 0	21 0 0	22 0 0	30 0 0	21 0 0
orange.....	32 6 0	33 6 0	33 6 0	0 0	32 6 0	33 6 0
PRECIPITATE, red.....per lb.	2 6	0 0	2 6	0 0	2 6	0 0
white.....	2 5	0 0	2 5	0 0	2 5	0 0
PRUSSIAN BLUE.....	0 0 0	0 0 0	1 0 0	1 10	0 0 0	0 0 0
SALTS—						
Alum.....per ton	145 0 0	150 0 0	150 0 0	155 0 0	145 0 0	150 0 0
powder.....	165 0 0	170 0 0	170 0 0	175 0 0	165 0 0	170 0 0
Ammonia.....						
Carbonate.....per lb.	0 5 3	0 6	0 5	0 0 54	0 5 3	0 6
Hydrochlorate, crude, white.....per ton	540 0 0	0 0	420 0 0	500 0 0	540 0 0	0 0
British (see Sal Ammoniac)						
Muriate (see Hydrochlorate)						
Sulphate.....per ton	330 0 0	340 0 0	280 0 0	290 0 0	330 0 0	340 0 0
Argol, Cape.....per cwt	65 0 0	85 6 0	65 0 0	72 6 0	65 0 0	85 6 0
France.....	45 0 0	60 0 0	45 0 0	70 0 0	45 0 0	60 0 0
Oporto, red.....	32 0 0	25 0 0	25 0 0	23 0 0	32 0 0	25 0 0
Sicily.....	45 0 0	50 0 0	50 0 0	55 0 0	45 0 0	50 0 0
Naples, white.....	70 0 0	75 0 0	70 0 0	70 0 0	70 0 0	75 0 0
Florence, white.....	70 0 0	75 0 0	70 0 0	70 0 0	70 0 0	75 0 0
red.....	60 0 0	65 0 0	65 0 0	70 0 0	60 0 0	65 0 0
Bologna, white.....	0 0 0	0 0 0	78 0 0	80 0 0	0 0 0	0 0 0
Ashes (see Potash and Soda)						
Bleaching powd.....per cwt.	10 3 0	10 6 0	13 0 0	13 6 0	10 3 0	10 6 0
Borax, crude.....	25 0 0	40 0 0	25 0 0	35 0 0	25 0 0	40 0 0
(Tinned).....	40 0 0	58 0 0	35 0 0	52 6 0	40 0 0	58 0 0
British refined.....	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Calomel.....per lb.	2 5	0 0	2 5	0 0	2 5	0 0
Copper—						
Sulphate.....per cwt.	24 0 0	24 6 0	24 6 0	25 0 0	24 0 0	24 6 0
Copperas, green.....per ton	62 6 0	60 0 0	65 0 0	60 0 0	62 6 0	60 0 0
Corrosive Sublimat.....p. lb.	1 11 0	0 0	1 11 0	0 0	1 11 0	0 0
Cr. Tartar, French, p. cwt.	59 0 0	99 0 0	78 0 0	80 0 0	59 0 0	99 0 0
Vauclian grey.....	9 0 0	75 0 0	65 0 0	70 0 0	9 0 0	75 0 0
brown.....	65 0 0	70 0 0	65 0 0	60 0 0	65 0 0	70 0 0
Epsom Salts.....per cwt.	8 0 0	8 6 0	8 0 0	8 0 0	8 0 0	8 6 0
Glauber Salts.....	5 6 0	6 0 0	5 6 0	6 0 0	5 6 0	6 0 0
Lime—						
Acetate, white, per cwt.	12 6 0	21 6 0	13 0 0	21 6 0	12 6 0	21 6 0
Magnesia.....						
Carbonate.....	42 6 0	0 0	42 6 0	0 0	42 6 0	0 0
Potash—						
Bichromate.....per lb.	0 5 0	0 0	0 5 0	0 0 54	0 5 0	0 0
Carbonate.....						
Potashes, Canada, 1st sort.....per cwt.	32 0 0	0 0	33 0 0	0 0	32 0 0	0 0
Potashes, Canada, 1st sort.....per cwt.	32 0 0	0 0	34 0 0	35 0 0	32 0 0	0 0
Chlorate.....per lb.	1 0 0	0 0	1 0 0	0 0	1 0 0	0 0
Hydriodate (see Potassium, Iodide)						
Muriate (see Potassium, Chloride)						
Prussiate.....per lb.	9 1 3	1 0	1 0 0	1 1	9 1 3	1 0
red.....	1 9 4	1 10	1 9 4	1 10	1 9 4	1 10
Tartrate (see Argol and Cream of Tartar)						
Chloride.....per cwt.	7 10 0	8 0	8 3 0	8 6 0	7 10 0	8 0
Iodide.....per lb.	12 0 0	0 0	11 9 0	0 0	12 0 0	0 0
Potassium—						
Chloride.....per cwt.	7 10 0	8 0	8 3 0	8 6 0	7 10 0	8 0
Iodide.....per lb.	12 0 0	0 0	11 9 0	0 0	12 0 0	0 0
Quinine—						
Sulphate, British, in bottles.....per oz.	5 9 0	0 0	4 3 0	4 6 0	5 9 0	0 0
Sulphate, French.....	5 2 0	0 0	4 0 0	0 0	5 2 0	0 0
Sal Acetic.....	0 13 0	0 10 4	0 10 0	0 0	0 13 0	0 10 4
Sal Ammoniac, Brit. cwt.	38 0 0	38 0 0	35 0 0	37 0 0	38 0 0	38 0 0
Saltpetre.....						
Bengal, 6 per cent. or under.....per cwt.	25 9 0	26 3 0	19 0 0	19 6 0	25 9 0	26 3 0
Bengal, over 6 per cent.....per cwt.	24 9 0	25 6 0	18 3 0	19 0 0	24 9 0	25 6 0
Bombay.....	0 0 0	0 0	18 0 0	18 0 0	0 0 0	0 0
Madr & Kurrachee Pet.....	0 0 0	0 0	18 0 0	18 0 0	0 0 0	0 0
European.....	0 0 0	0 0	21 6 0	22 6 0	0 0 0	0 0
British, refined.....	26 0 0	26 6 0	29 9 0	23 6 0	26 0 0	26 6 0

Soda: Bicarbonate, p. cwt.	1869.		1868.	
	s. d.	s. d.	s. d.	s. d.
Carbonate.....	0 13 0	0 2	0 3 0	0 32
Soda Ash.....per deg.	82 6 0	0 0	90 0 0	92 6 0
Soda Crystals per ton.	18 0 0	22 0 0	22 0 0	0 0
Hyposulphite.....per cwt.	16 0 0	17 0 0	11 0 0	12 6 0
Nitrate.....	41 0 0	42 0 0	37 6 0	38 0 0
SODA OF LEAD White, cwt.	29 0 0	30 0 0	28 0 0	29 0 0
Brown.....				
SULPHUR (see Brimstone)				
VANDERS.....per lb.	1 0 0	1 2	0 11 0	1 0
VERMILION, English.....per lb.	2 6 0	3 0	2 9 0	3 1
China.....	2 8 0	0 0	3 0 0	0 0
DRUGS—				
Alves, Hapatic.....per cwt.	80 0 0	180 0 0	90 0 0	190 0 0
Socotrine.....	120 0 0	240 0 0	180 0 0	340 0 0
Cape, good.....	28 0 0	32 0 0	30 0 0	32 0 0
Barbadoes.....	70 0 0	190 0 0	75 0 0	230 0 0
AMBERGRIS, grey.....per oz.	27 6 0	32 6 0	32 0 0	35 0 0
BALSAMS—				
Canada.....per lb.	1 3 0	0 0	1 5 0	1 6
Cavi.....	2 0 0	0 0	1 7 0	1 9
Peru.....	11 0 0	11 6 0	9 0 0	0 0
Tolu.....	2 3 0	0 0	2 7 0	0 0
BARBS—				
Canella alba.....per cwt.	30 0 0	45 0 0	27 0 0	36 0 0
Cascarilla.....	26 0 0	36 0 0	0 10 0	32 0 0
Peru, crown & grey per lb.	3 0 0	3 6 0	2 4 0	2 10
Calisaya, flat.....	2 10 0	3 3 0	2 3 0	2 6
Cardamom.....	0 9 0	1 5 0	1 0 0	1 3
Pitapo.....	3 0 0	0 0	1 6 0	0 0
Red.....	0 4 0	0 0	1 6 0	0 0
Bucho Leaves.....	10 0 0	10 0 0	132 4 0	0 0
CAMPION, China.....per cwt.	115 0 0	0 0	135 0 0	0 0
Japan.....	1 3 1/2	1 8	1 10 0	0 0
Refin Eng. per lb.	2 0 0	2 3 0	2 10 0	0 0
CANTHARIDES.....	60 0 0	100 0 0	45 0 0	80 0 0
CHASTORUM.....per lb.	5 0 0	32 0 0	5 0 0	32 0 0
DRAGON'S BLOOD, red p. cwt.	100 0 0	180 0 0	100 0 0	230 0 0
humid.....	100 0 0	100 0 0	100 0 0	240 0 0
FRUITS AND SEEDS (see also Seeds and Spices)				
Anise, China Star per cwt.	110 0 0	115 0 0	115 0 0	120 0 0
German, &c.....	26 0 0	38 0 0	27 0 0	41 0 0
Beans, Tongue.....per lb.	1 1 0	1 6 0	1 0 0	1 6
Cardamoms, Malabar.....				
good.....	7 6 0	8 0 0	7 6 0	9 0 0
inferior.....	5 6 0	7 0 0	5 6 0	7 6 0
Madras.....	4 6 0	8 6 0	4 6 0	8 0 0
Ceylon.....	2 9 0	3 0 0	2 3 0	3 0 0
Corozo Nuts.....per cwt.	16 0 0	18 0 0	12 0 0	18 0 0
Cassia Fistula.....	11 0 0	13 0 0	10 0 0	12 0 0
Caster Seeds.....	26 0 0	28 0 0	32 0 0	35 0 0
Cocculus Indicus.....	0 6 0	0 10 0	0 8 0	0 11
Crocus.....per cwt.	40 0 0	42 0 0	41 0 0	45 0 0
Cubeba.....	38 0 0	48 0 0	16 0 0	20 0 0
Cumin.....	10 0 0	12 6 0	11 0 0	12 0 0
Dividivi.....	39 0 0	40 0 0	45 0 0	48 0 0
Penang.....	7 0 0	8 0 0	13 0 0	19 0 0
Guinea, Grains.....	10 0 0	13 0 0	18 0 0	23 0 0
Juniper Berries.....	20 0 0	28 0 0	25 0 0	31 0 0
Myrobalsans.....	10 0 0	13 0 0	18 0 0	23 0 0
Nux Vomica.....	20 0 0	28 0 0	25 0 0	31 0 0
Tamarinds, East India, new.....	10 0 0	28 0 0	30 0 0	14 0 0
Vanilla, large.....per lb.	27 0 0	30 0 0	4 0 0	8 0 0
inferior.....	25 0 0	30 0 0	1 6 0	0 0
Wormseed per cwt.	0 6 0	0 9 0	0 9 0	0 10
Ginger, Preserved, in bond (duty id. per lb.) per lb.				
GRMS (see separate list)				
HONEY, Narbonne.....	21 0 0	36 0 0	25 0 0	36 0 0
Cuba.....	25 0 0	45 0 0	24 0 0	48 0 0
Jamaica.....	7 6 0	7 10 0	6 6 0	0 0
ISINGLASS, Brazil.....	3 5 0	4 0 0	2 0 0	4 0 0
Tongue sort.....	2 3 0	4 0 0	2 0 0	4 0 0
East India.....	4 0 0	4 5 0	3 0 0	10 0 0
West India.....	5 0 0	5 6 0	5 6 0	7 6 0
Russ, long staple.....	1 6 0	2 6 0	1 6 0	2 6
leaf.....	3 0 0	4 1 0	3 0 0	4 10
Simovia.....	3 0 0	3 0 0	0 9 0	3 10
JALAP, good.....	0 5 0	0 6 0	0 6 0	0 6
inferior stems.....	0 1 0	0 1 1/2	0 0 0	0 0
LEMON JUICE.....per degree	63 0 0	68 0 0	65 0 0	70 0 0
LICORICE, Spanish per cwt.	48 0 0	50 0 0	50 0 0	59 0 0
Italian.....	3 0 0	3 6 0	3 6 0	0 0
MANNA, flaky.....	1 3 0	1 9 0	1 10 0	0 0
small.....per oz.	19 0 0	35 0 0	19 0 0	38 0 0
MUSK.....				
Almond, expressed per lb.	1 3 0	0 0	1 10 0	0 0
Caster, 1st pale.....	0 5 0	0 6 0	0 6 0	0 6
second.....	0 4 0	0 5 0	0 6 0	0 6
inferior & dark.....	0 4 0	0 5 0	0 6 0	0 6
Bombay (in casks).....per cwt.	4 0 0	6 3 0	0 54 0	0 0
Cod Liver.....per gal.	0 8 0	0 4 0	1 2 0	1 6
Essential Oils—				
Almond.....per lb.	40 0 0	0 0	40 0 0	0 0
Aniseed.....per lb.	8 0 0	8 0 0	80 0 0	8 0 0
Bay.....per cwt.	70 0 0	80 0 0	7 6 0	16 0 0
Bergamot.....per lb.	0 12 0	0 17 0	0 2 0	0 2 1/2
Cajeput, (in bond) per oz.	0 12 0	0 2		

1869.				1868.			
Essential Oils, continued.—				s. d.			
Caraway	5	3	6	5	0	6	6
Cassia	5	3	5	5	0	5	9
Cinnamon	4	6	1	0	3	6	6
Cinnamon-leaf	0	6	0	0	11	0	2
Citronelle	0	24	0	0	24	0	3
fine	0	31	0	0	4	0	0
Clove	0	0	0	0	0	0	0
Juniper	1	9	2	1	9	2	0
Lavender	2	9	3	2	9	3	9
Lemon	4	6	0	4	6	0	0
Lemongrass	0	4	0	0	5	0	7
Neroli	0	0	0	0	0	0	0
Nutmeg	0	4	0	0	3	0	9
Orange	0	5	0	0	7	0	0
Otto of Rose	15	0	20	16	0	20	9
Peppermint	10	0	20	0	0	0	0
American	10	0	20	0	0	0	0
English	38	0	43	36	0	43	0
Rosemary	1	9	2	1	9	2	0
Sassafras	3	6	4	3	0	3	3
Spearmint	1	10	18	16	0	25	0
Thyme	1	10	0	1	0	4	0
Mace, expressed	0	0	0	0	24	0	24
Opium, Turkey	35	0	40	0	16	0	26
inferior	24	0	0	0	0	0	0
QUASSIA (bitter wood)	200	0	205	0	100	0	105
RHUBARB, China, good and fine	4	6	7	5	0	8	0
Good, mid. to ord.	0	0	0	0	10	12	0
Dutch trimmed	0	0	0	0	9	10	0
Russian	0	0	0	0	0	0	0
ROOTS.							
Calumba	40	0	50	0	20	0	35
China	27	0	33	0	30	0	35
Galangal	13	0	18	0	13	0	21
Geniava	22	0	30	0	18	0	17
Heliebore	22	0	30	0	28	0	34
Orris	38	0	44	0	36	0	40
Pellitory	58	0	60	0	58	0	60
Pink	0	6	0	0	0	11	0
Rhatany	0	6	0	0	6	0	10
Seneka	1	11	0	1	6	0	0
Snake	1	3	0	1	5	2	0
Saffron, Spanish	27	0	34	0	25	0	35
SALPR	110	0	120	0	90	0	110
SARAPARILLA, Lima per lb.	0	7	0	0	0	0	0
Pura	1	1	3	0	0	0	0
Honduras	0	1	1	0	10	1	0
Jamaica	1	4	2	1	0	2	1
SASSAPARILLA	14	0	34	0	10	0	0
SCAMMONY, Virgin	10	0	36	0	36	0	36
second & ordinary	10	0	23	0	11	0	23
SENNA, Bombay	0	8	0	0	2	0	3
Thioniv	0	0	0	0	11	0	21
Alexandria	0	10	0	0	0	0	0
SPEKMACET, refined	1	5	0	1	6	0	0
American	1	4	0	1	5	0	0
SQUILL	0	1	0	0	1	0	24
GUMS.							
AMMONIAC, drop	220	0	260	0	180	0	220
lump	140	0	240	0	100	0	160
ANIMI, fine washed	230	0	330	0	210	0	230
bold scraped	200	0	280	0	190	0	210
dark	160	0	180	0	120	0	150
ARABIC, E. I., fine	80	0	110	0	70	0	100
pale picked	78	0	84	0	35	0	95
arts, gd. to fin	70	0	76	0	75	0	84
garblings	40	0	60	0	45	0	63
TURKEY, pick. gd. to fin	180	0	220	0	170	0	210
second & ind.	90	0	175	0	80	0	100
in sorts	75	0	110	0	65	0	80
Gedda	44	0	52	0	38	0	40
BABARY, white	80	0	100	0	80	0	80
brown	74	0	78	0	68	0	72
AUSTRALIAN	32	0	50	0	37	0	48
INSAPATIMA, com. to gd	75	0	110	0	55	0	90
JENAFUTIN, 1st qual.	100	0	140	0	80	0	100
2nd	140	0	220	0	140	0	240
3rd	51	0	120	0	70	0	120
COPAL, Angola red	92	6	105	0	60	0	70
Benquela	94	0	100	0	84	0	84
Sierra Leone	0	5	1	0	6	1	3
Mailla	31	0	47	0	27	0	44
DAMMAR, pale	94	0	100	0	85	0	90
EUPHORBIA	18	0	20	0	13	0	19
GALBANUM	220	0	250	0	240	0	280
GAMBOGE, pick. pipe	300	0	340	0	480	0	700
in sorts	0	8	1	0	6	2	0
GUAIACUM	60	0	120	0	100	0	130
KINO	46	0	60	0	35	0	40
KOWRIE, rough	50	0	100	0	42	0	75
scraped	5	0	5	0	5	0	7
MARIG, pick.	200	0	260	0	170	0	210
MYRRH, gd. & fine per cwt.	50	0	175	0	180	0	180
in sorts	80	0	85	0	84	0	84
OLIBANTUM, p.	70	0	79	0	72	0	80
amber & ylw.	35	0	45	0	27	0	45
garblings	20	0	30	0	20	0	30
SENDAI	62	0	105	0	62	0	107
SANTALAC	15	0	14	0	12	0	10
THUS	231	0	280	0	210	0	280
TRAGACANTH, leaf	120	0	230	0	160	0	220
in sorts							

OILS.

SEAL, pale.....	per tun	37	6	0	38	0	0	38	0		
yellow to tinged ..	..	33	0	36	0	34	0	36	0		
brown .....	..	31	0	32	0	33	0	34	0		
SPERM, body .....	..	102	0	0	100	0	0	100	0		
headmatter .....	..	0	0	0	0	0	0	0	0		
COD .....	..	44	0	0	45	0	38	0	39	0	
WHALE, South Sea, pale ..	..	36	0	40	0	36	0	36	0		
yellow .....	..	37	0	0	36	0	37	0	37	0	
brown .....	..	37	0	0	34	0	37	0	37	0	
East India, Fish .....	..	31	0	2	35	0	35	0	35	0	
OLIVE, Galipoli .....	..	53	0	0	73	0	73	0	73	0	
Trieste .....	..	51	0	52	0	72	0	73	0		
Levant .....	..	47	0	48	0	67	0	70	0		
Mogador .....	..	46	0	0	68	0	70	0	70	0	
Spanish .....	..	49	0	0	70	0	70	0	70	0	
Sidly .....	..	49	0	0	70	0	70	0	70	0	
COCONUT, Ceylon	per ton	48	0	0	54	0	54	0	54	0	
Ceylon .....	..	40	0	0	50	0	50	0	50	0	
Sydney .....	..	40	0	45	0	42	0	50	0		
GROUND NUT AND GINGELLY:											
Bombay .....	..	0	0	0	50	0	50	0	50	0	
Madras .....	..	39	0	40	0	43	0	43	0	43	0
PALM, fine .....	..	41	0	0	39	10	40	0	40	0	
LANSIED .....	..	31	0	0	31	10	32	10	33	10	
RAPESEED, English, pale ..	..	37	0	0	38	0	38	0	38	0	
brown .....	..	34	0	0	34	0	34	0	34	0	
Foreign pale .....	..	37	0	0	38	0	38	0	38	0	
brown .....	..	37	0	0	38	0	38	0	38	0	
COTTONSEED .....	..	26	10	32	0	30	0	30	0	30	0
LARD .....	..	78	0	80	0	73	0	73	0	73	0
TALLOW .....	..	35	0	0	37	0	37	0	38	0	
TURPENTINE, American, cks.	..	14	0	15	0	11	0	11	0	11	0
PETROLEUM, Crude .....	..	14	0	15	0	10	0	11	0	11	0
refined, per gall.	s. d.	1	8	1	1	5	0	1	8	1	5
Spirit .....	..	0	8	0	9	8	0	0	9	8	0
SEEDS.											
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
CANARY	per qr.	60	0	65	0	50	0	70	0	70	0
CARAWAY, English, per cwt.	..	36	0	38	0	45	0	46	0	46	0
German, do. ....	..	32	0	44	0	40	0	48	0	48	0
CORIANDER .....	..	20	0	22	0	15	0	17	0	17	0
HEMP	per qd.	42	0	44	0	42	0	44	0	44	0
LANSIED, English, per qr.	..	65	0	72	0	72	0	72	0	72	0
Black Sea & Azof ..	..	58	0	0	65	0	65	0	65	0	65
Calcutta .....	..	56	0	0	64	0	64	0	64	0	64
Bombay .....	..	59	0	6	64	0	64	0	64	0	64
St. Petersburg .....	..	57	0	57	0	0	0	0	0	0	0
Mustard, brown, per bush.	..	14	0	17	0	15	0	16	0	16	0
white .....	..	13	0	18	0	10	0	12	0	12	0
POPPY, East India, per qr.	..	62	0	0	56	0	56	0	56	0	56
SPICES.											
CASSIA LINEA	per cwt.	130	0	140	0	116	0	120	0	120	0
Vera .....	..	50	0	90	0	50	0	70	0	70	0
Buda .....	..	140	0	160	0	160	0	180	0	180	0
CINNAMON, Ceylon .....	..	1st quality ..	2	0	3	10	1	11	0	2	6
2nd do. ....	..	1	9	0	3	1	6	0	2	3	0
3rd do. ....	..	1	8	0	3	1	4	0	2	2	0
Tellicherry .....	..	0	0	0	0	0	0	0	0	0	0
CLOVES, Penang .....	..	0	10	0	11	0	10	1	1	0	1
Amboyna .....	..	0	5	0	6	0	5	0	6	0	5
Zanzibar .....	..	0	4	0	4	0	3	0	4	0	3
GINGER, Jam, fine per cwt.	..	90	0	200	0	100	0	150	0	150	0
Ord. to good .....	..	35	0	80	0	40	0	95	0	95	0
African .....	..	24	0	25	0	29	0	0	0	0	0
Bengal .....	..	39	0	0	30	0	30	0	30	0	30
Malabar .....	..	0	0	0	33	0	33	0	33	0	33
Cochin .....	..	32	0	120	0	40	0	110	0	110	0
Pepper, Bk. Malabar, per lb.	..	0	5	0	5	0	4	1	0	4	1
White, Tellicherry ..	..	0	10	0	1	0	9	0	1	0	9
Ceyenne .....	..	0	4	0	8	0	6	0	8	0	6
VARIOUS PRODUCTS.											
COCHINEAL—											
Honduras, black	per lb.	3	1	4	5	3	3	4	5	3	4
silver .....	..	2	11	3	6	3	1	9	3	10	3
pasty .....	..	1	6	0	2	10	1	9	0	3	0
Mexican, black .....	..	3	0	3	3	3	2	3	3	3	3
Brazil .....	..	2	11	0	1	0	1	0	1	0	1
Tenerife, black .....	..	3	1	4	10	3	2	4	1	3	4
silver .....	..	2	11	3	6	3	3	0	3	3	6
PUMICE STONE	per ton	120	0	160	0	120	0	160	0	160	0
SOAP, Castile .....	..	21	0	26	0	25	0	30	0	30	0
SPONGE, Turk, fine pick. prib.	12	0	15	0	12	0	14	0	14	0	14
Fair to good .....	..	5	0	11	0	5	0	11	0	11	0
Ordinary .....	..	4	2	0	0	4	2	0	0	4	2
Bahama .....	..	0	6	2	3	0	6	2	3	0	6
TERRA JAPONICA—											
Gambier	per cwt.	17	0	17	0	18	6	17	0	17	0
2nd cubes .....	..	21	0	26	0	25	0	27	0	27	0
Cutch .....	..	30	0	32	0	62	6	55	6	55	6
WOOD, DYE, Bar	per ton	44	0	45	0	44	0	44	0	44	0
Brazil .....	..	40	0	40	0	40	0	40	0	40	0
Brazilito .....	..	0	0	0	85	7	85	7	85	7	85
Cam .....	..	28	0	32	0	24	0	28	0	28	0
Fustic, Cuba .....	..	7	15	8	15	7	10	0	7	10	0
Red Sanders .....	..	7	5	7	5	7	5	7	5	7	5
Savanna .....	..	0	0	0	6	0	6	0	6	0	6
Locowood, Campeachy ..	..	0	0	10	10	9	10	0	9	10	0
Honduras .....	..	7	5	7	5	7	5	7	5	7	5
St. Domingo .....	..	7	5	7	5	7	5	7	5	7	5
Jamaica .....	..	7	5	7	5	7	5	7	5	7	5
Lima, first pile	14	6	15	0	22	0	22	0	22	0
Red Sanders	9	0	11	0	6	12	9	10	13	0
SAPAN, Bimas, &c.	9	0	11	0	9	10	13	0	13	0



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Thursday next, the 17th of June, M. DUMAS, Master of

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M. DUMAS, Master of

Mint, and Perpetual Secretary of the Imperial
who was one of Faraday's intimate friends. By
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	s. d.	s. d.	s. d.	s. d.		£ s.	£ s.	£ s.	£ s.
Essential Oils, continued.—									
Caraway	5 3	6 0	5 0	6 6		0 0	38 0	0 0	0 0
Cassia	5 3	5 6	5 6	5 9		0 0	34 0	0 0	36 0
Cinnamon	1 0	4 6	1 0	3 6		32 0	33 0	34 0	34 0
Cinnamon-leaf ..	0 6	0 0	0 14	0 2		0 0	100 0	0 0	104 0
Citronella	0 24	0 0	0 22	0 3		0 0	0 0	0 0	0 0
Citronella fine.....	0 24	0 0	0 2	0 0		0 0	38 0	0 0	39 0
Clove.....per lb.	2 9	0 0	2 4	0 0		40 0	36 0	0 0	0 0
Juniper	1 0	0 0	0 0	0 0		0 0	35 0	0 0	37 0
Lavender.....	1 0	0 0	0 0	0 0		0 0	34 0	0 0	0 0
Lemon.....	1 0	0 0	0 0	0 0		0 0	35 0	0 0	0 0
Lemongrass	1 0	0 0	0 0	0 0		0 0	33 0	0 0	0 0
Neroli	1 0	0 0	0 0	0 0		0 0	73 0	0 0	0 0
Nutmeg	1 0	0 0	0 0	0 0		0 0	70 0	0 0	0 0
Orange	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Otto of	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Pepper	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Am.	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Engl.	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Rosen	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Sassa	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Spica	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Thyrs	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Mace, e	1 0	0 0	0 0	0 0		0 0	40 0	0 0	0 0
OPHIUM, T	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
in	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
QUASSIA (.....	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
RHUBARB	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Eng	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Good	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Dutch	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Russ	1 0	0 0	0 0	0 0		0 0	38 0	0 0	0 0
ROOTS—									
Calumb	1 0	0 0	0 0	0 0		0 0	11 0	0 0	0 0
China	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Galang	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Centiat	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Hellebo	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Orris	1 0	0 0	0 0	0 0		0 0	70 0	0 0	0 0
Pellitor	1 0	0 0	0 0	0 0		0 0	45 0	0 0	0 0
Pink	1 0	0 0	0 0	0 0		0 0	43 0	0 0	0 0
Rhatany	1 0	0 0	0 0	0 0		0 0	17 0	0 0	0 0
Seneka	1 0	0 0	0 0	0 0		0 0	44 0	0 0	0 0
Snake	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
SAFFRON, S	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
SALEP ...	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
SARSAPAR	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Par	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Hondia	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Jamaica	1 0	0 0	0 0	0 0		0 0	16 0	0 0	0 0
SASSAPRA	1 0	0 0	0 0	0 0		0 0	12 0	0 0	0 0
SCAMMON	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
second	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
SENNA, B.	1 0	0 0	0 0	0 0		0 0	120 0	0 0	0 0
Tinive	1 0	0 0	0 0	0 0		0 0	70 0	0 0	0 0
Alexand	1 0	0 0	0 0	0 0		0 0	150 0	0 0	0 0
SPERMACE	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Americ	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
SQUILL ...	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
GUMS.									
AMMONIAC	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
ANIMI, B.	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
B	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
g	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
d	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
ARABIC, P	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
pale	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
s	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
s	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
TURKEY, P	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
BABARY	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
AUSTRALI	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
ASAPETU	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
BENJAMIN	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
COPAL, AT	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Bo	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Sie	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
Ma	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
DAMMAR, P	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
EUPHORBIA	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
GALBANUM	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
GAMBOGE, P	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
in	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
GUAIACUM	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
KINO	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
KOWRIE, P	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
MASTIC, pick	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
MYRRH, gd. & n. per	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
sorts	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
OLIBANUM, P. sorts	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
amber & ylw.	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
garblings	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
SENSEAL	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
SANTARAC	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
THUS	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
TRAGACANTH, leaf	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
in sorts	1 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0
LEADERS									
Honduras	1 0	0 0	0 0	0 0		7 5	0 0	0 0	0 0
St. Domingo	1 0	0 0	0 0	0 0		7 0	0 0	0 0	0 0
Jamaica	1 0	0 0	0 0	0 0		7 5	0 0	0 0	0 0
LIMA, first pill	1 0	0 0	0 0	0 0		14 0	0 0	0 0	0 0
RED SANDERS	1 0	0 0	0 0	0 0		7/26	0 0	0 0	0 0
SAPAN, BIMA, &c.	1 0	0 0	0 0	0 0		9 0	0 0	0 0	0 0



Easter
happy,

holy,
hallowed
time!



the French Mint, and Perpetual Secretary of the Imperial Academy, who was one of Faraday's intimate friends. By permission of the managers, the lecture will be given in the theatre of the Royal Institution, associated for so many years with FARADAY's own expositions. M. DUMAS, who was formerly Minister of Public Instruction in France, and

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My dear little friend

Lillie

with lots of love

From Mother

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March 20/69

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foreign chemists upon his accepting the invitation of the president and council of the Society to deliver a lecture to the Fellows. The inaugural lecture will be delivered on Thursday next, the 17th of June, by M. DUMAS, Master of

strong opinions, and being gifted with rare facility in clothing them in appropriate language, he maintained the dignity of his office, and never sank the President in the